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PTO/SB/17p (09-06)  
Approved for use through 03/31/2007. OMB 0651-0031  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

**PETITION FEE**  
**Under 37 CFR 1.17(f), (g) & (h)**  
**TRANSMITTAL**  
(Fees are subject to annual revision)

Send completed form to: Commissioner for Patents  
P.O. Box 1450, Alexandria, VA 22313-1450

Application Number	10/553 663
Filing Date	1.A. 04/09/2004
First Named Inventor	EDUARDO DE LA RIVERA PEREZ
Art Unit	N.A.
Examiner Name	N.A.
Attorney Docket Number	576391-2001

Enclosed is a petition filed under 37 CFR § 1.47 that requires a processing fee (37 CFR 1.17(f), (g), or (h)). Payment of \$ 200.00 is enclosed.

This form should be included with the above-mentioned petition and faxed or mailed to the Office using the appropriate Mail Stop (e.g., Mail Stop Petition), if applicable. For transmittal of processing fees under 37 CFR 1.17(i), see form PTO/SB/17i.

**Payment of Fees** (small entity amounts are NOT available for the petition fees)

☐ The Commissioner is hereby authorized to charge the following fees to Deposit Account No. \_\_\_\_\_:

☐ petition fee under 37 CFR 1.17(f), (g) or (h) ☐ any deficiency of fees and credit of any overpayments

Enclose a duplicative copy of this form for fee processing.

☐ Check in the amount of \$ \_\_\_\_\_ is enclosed.

☒ Payment by credit card (Form PTO-2038 or equivalent enclosed). Do not provide credit card information on this form.

**Petition Fees under 37 CFR 1.17(f): Fee \$400 Fee Code 1462**

For petitions filed under:

- § 1.36(a) - for revocation of a power of attorney by fewer than all applicants
- § 1.53(e) - to accord a filing date.
- § 1.57(a) - to accord a filing date.
- § 1.182 - for decision on a question not specifically provided for.
- § 1.183 - to suspend the rules.
- § 1.378(e) - for reconsideration of decision on petition refusing to accept delayed payment of maintenance fee in an expired patent.
- § 1.741(b) - to accord a filing date to an application under § 1.740 for extension of a patent term.

**Petition Fees under 37 CFR 1.17(g): Fee \$200 Fee Code 1463**

For petitions filed under:

- § 1.12 - for access to an assignment record.
- § 1.14 - for access to an application.
- § 1.47 - for filing by other than all the inventors or a person not the inventor.
- § 1.59 - for expungement of information.
- § 1.103(a) - to suspend action in an application.
- § 1.136(b) - for review of a request for extension of time when the provisions of section 1.136(a) are not available.
- § 1.295 - for review of refusal to publish a statutory invention registration.
- § 1.296 - to withdraw a request for publication of a statutory invention registration filed on or after the date the notice of intent to publish issued.
- § 1.377 - for review of decision refusing to accept and record payment of a maintenance fee filed prior to expiration of a patent.
- § 1.550(c) - for patent owner requests for extension of time in ex parte reexamination proceedings.
- § 1.956 - for patent owner requests for extension of time in inter partes reexamination proceedings.
- § 5.12 - for expedited handling of a foreign filing license.
- § 5.15 - for changing the scope of a license.
- § 5.25 - for retroactive license.

**Petition Fees under 37 CFR 1.17(h): Fee \$130 Fee Code 1464**

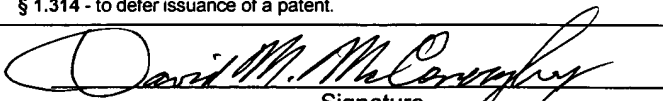
For petitions filed under:

- § 1.19(g) - to request documents in a form other than that provided in this part.
- § 1.84 - for accepting color drawings or photographs.
- § 1.91 - for entry of a model or exhibit.
- § 1.102(d) - to make an application special.
- § 1.138(c) - to expressly abandon an application to avoid publication.
- § 1.313 - to withdraw an application from issue.
- § 1.314 - to defer issuance of a patent.

11/16/2006 ATRAN1 00000156 10553663

01 FC:1463

200.00 0P

  
Signature  
DAVID M. McCONAUGHY  
Typed or printed name

NOVEMBER 9, 2006  
Date

24786  
Registration No., if applicable

This collection of information is required by 37 CFR 1.17. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 5 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

**BEST AVAILABLE COPY**

DAVID M. McCONOUGHIEY, ESQ.  
STOLL, MISKIN & BADIE  
DOCKET: 576391-2003

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553663	I.A. 04/16/2004	Eduardo DIAZ DEL RIO PEREZ	576391-2003	3780
EXAMINER				
N.A.				
ART UNIT			PAPER NUMBER	
N.A.				

**PETITION BY ASSIGNEE  
PURSUANT TO  
35 U.S.C. § 118 AND 37 C.F.R. § 1.47**

## PETITION

FUSACO IP, Sarl, the assignee of the entire right, title, and interest in the above-identified patent application, petitions to permit it to make application for patent itself.

## REMARKS

### Statement of the Issue

The Patent Statute states, in pertinent part,

Whenever an inventor refuses to execute an application for patent .... a person to whom the inventor has assigned or agreed in writing to assign the invention or who otherwise shows sufficient proprietary interest in the matter justifying such action, may make application may make application for patent on behalf of and as agent for the inventor on proof of the pertinent facts and a showing that such action is necessary to preserve the rights of the parties or to prevent irreparable damage; and the Director may grant a patent to such inventor upon such notice to him as the Director deems sufficient, and on compliance with such regulations as he prescribes.

35 U.S.C. § 118

The Patent and Trademark Rules state, in pertinent part,

Filing when an inventor refuses to sign or cannot be reached.

\* \* \* \* \*

(b) Whenever all of the inventors refuse to execute an application for patent, or cannot be found or reached after diligent effort, a person to whom an inventor has assigned or agreed in writing to assign the invention, or who otherwise shows sufficient proprietary interest in the matter justifying such action, may make application for patent on behalf of and as agent for all the inventors. The oath or declaration in such an application must be accompanied by a petition including proof of the pertinent facts, a showing that such action is necessary to preserve the rights of the parties or to prevent irreparable damage, the fee set forth in § 1.17(g), and the last known address of all of the inventors. An inventor may subsequently join in the application by filing an oath or declaration complying with § 1.63.

37 C.F.R. § 1.47(b)

### A. The Inventor's Declaration.

The Inventor's Declaration, unexecuted, is attached as Exhibit 1.

### B. The Relationship Between FUSACO IP, Sarl and the Inventor.

FUSACO IP, Sarl is the assignee of the entire right, title, and interest in the invention of the above-identified patent application. See Exhibit 2 attached.

### **C. FUSACO's Showing That the Inventor Refuses to Execute the Inventor's Declaration.<sup>i</sup>**

#### **1. Genealogy of the Present Application.**

The present application, Serial No. 10/553633, is the United States National Phase application of International Application No. PCT/IB04/01539, filed April 18, 2003 (the "International Application.") The International Application claims the priority of U.S. Provisional Patent Application No. 60/463763, filed April 18, 2003 (the "Provisional Application") and is identical to the Provisional Application, except that the International Application refers to the Provisional Application on page 1 and the International Application introduces the claims with "What is claimed is:".

#### **2. The Inventor's Refusal to Execute the Inventor's Declaration.**

On April 18, 2003, Eduardo Diaz Del Rio Perez, the individual identified as the sole inventor in the present application, execute a Declaration in the application that was filed as, and became, the Provisional Application. See Exhibit 3.

On September 29, 2006, an Inventor's Declaration and a copy of the International Application, as published, was forwarded by cover letter of that date to Eduardo Diaz Del Rio Perez at his last known address by U.S. Postal Service Global Express Guaranteed. See attached Exhibit 4. That set of documents was delivered to the last known address on October 2, 2006. See attached Exhibit 5. A copy of the Declaration form had previously been sent to Sr. Diaz Del Rio Perez on September 25 and 26, 2006 with a request to tell counsel for FUSACO whether he would sign an Inventor's Declaration or not. See attached Exhibit 6.

On October 16, 2006, counsel for FUSACO received a telephone message from Daniel J. O'Connor of Baker and McKenzie LLP identifying himself as counsel for the inventor (Sr. Diaz Del Rio Perez.)

On November 6, 2006 an email was sent to Mr. O'Connor asking him to confirm that the requested executed declaration would not be forthcoming from Sr. Diaz Del Rio Perez and advise counsel for FUSACO by November 8, 2006. See Exhibit 7. Counsel for the inventor and counsel for FUSACO had a brief telephone conversation on the afternoon of November 6 at the conclusion of which counsel for the inventor undertook to see what he could do with respect to the execution of the declaration by the inventor. To date counsel for FUSACO has received no response whatsoever from Sr. Diaz Del Rio Perez regarding the execution of an Inventor's Declaration in the present application and no further response from counsel for the inventor.

Based on the foregoing, Assignee concludes that the inventor, Eduardo Diaz Del Rio Perez, refuses to execute the Inventor's Declaration as of the date of this Petition.

### **D. Statement of Last Known Address.**

The last known address of Eduardo Diaz Del Rio Perez is

---

<sup>i</sup> See the accompanying Declaration Of David M. McConoughey In Support Of Petition By Assignee Pursuant To 35 U.S.C. § 118 And 37 C.F.R. § 1.47.

Eduardo Diaz Del Rio Perez  
Calle Caleruega No. 3  
Madrid  
Spain 28033

On information and belief, Sr. Diaz Del Rio Perez is represented by counsel, as follows:

Daniel J. O'Connor, Esq.  
Baker & McKenzie LLP  
One Prudential Plaza  
130 East Randolph Drive  
Chicago, IL 60601

**E. The Invention Has Been Assigned to FUSACO IP, Sarl.**

The Assignment executed by the inventor, Eduardo Diaz Del Rio Perez, on April 18, 2003 explicitly provides

Now, this indenture witnesseth, that for the sum of Ten dollars (\$10.00) and for other good and valuable consideration, the receipt whereof is hereby acknowledged;

I hereby assign, sell, and transfer a 100% undivided interest in said invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee;

And I hereby authorize and request the Commissioner of Patents and Trademarks to issue said United States Letters Patent to said Assignee, as assignee of the whole right title and interest thereto;  
*See attached Exhibit 2.*

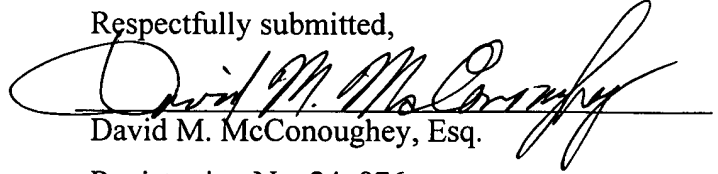
**F. The Grant of This Petition is Necessary to Preserve the Rights of the Parties and to Prevent Irreparable Damage.**

The sole inventor has refused to sign an Inventor's Declaration. Unless, this petition is granted, the present patent application will become abandoned and the property rights of the assignee in the invention of the present application will be lost.

## CONCLUSION

In view of the foregoing, Assignee requests the grant of this Petition.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "David M. McConoughey", is written over a horizontal line.

David M. McConoughey, Esq.

Registration No. 24, 876

Stoll, Miskin & Badie

350 Fifth Ave Ste 4710

New York, NY 10118-4710

Tel: 212.268.1530

## **EXHIBIT 1**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

# DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration  
Submitted  
With Initial  
Filing

OR

☒ Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)
Attorney Docket  
Number

576391-2003

First Named Inventor

DIAZ DEL RIO PEREZ, Eduardo

## COMPLETE IF KNOWN

Application Number

10/553,663

Filing Date

04/16/2004

Art Unit

N. A.

Examiner Name

N. A.

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Explosion-inhibiting Articles of Manufacture

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY)

04/16/2004

as United States Application Number or PCT International

Application Number

PCT/IB04/001539

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
PCT/IB04/001539	IB	04/16/2004	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing the form, call 1-800-PTO-9199 and select option 2.



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**DECLARATION — Utility or Design Patent Application**Direct all  
correspondence to:☐The address  
associated with  
Customer Number:

OR

☒Correspondence  
address below

Name

David M. McConoughey, Esq.

Address

c/o Stoll, Miskin &amp; Badie, 350 Fifth Ave Ste 4710

City

New York

State

NY

ZIP

10118-4710

Country

US

Telephone

212.268.1530

Email

dmccou@ix.netcom.com

**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**NAME OF SOLE OR FIRST INVENTOR:**☒

A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])

Eduardo

Family Name or Surname

Diaz Del Rio Perez

Inventor's Signature

Date

October \_\_, 2006

Residence: City

Madrid

State

Country

Spain

Citizenship

Spain

Mailing Address

Calle Caleruega No. 3

City

Madrid

State

Zip

E-28033

Country

Spain

☐

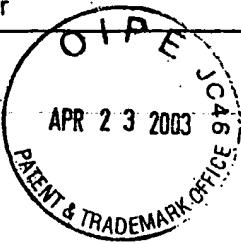
Additional inventors or a legal representative are being named on the

supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

**EXHIBIT 2**

**Assignment of Rights in Invention**  
**(Sole inventor; single assignee, without witness or notarization)**

Docket No.  
576391-2001

Inventor	Residence of Inventor
Eduardo Diaz Del Rio Perez 	C/Caleruega No. 3 28033 Madrid Spain
Assignee	Residence or Principal Place of Business of Assignee
Fusaco IP Sarl	p.a. DEV 2, Avenue de Gratta-Paille Casa postale 452 1000 Lausanne 30 Switzerland

*Whereas, I, the above-identified Inventor, have invented certain new and useful improvements in:*  
**Explosion-Inhibiting Articles of Manufacture**

*(hereinafter referred to as "Invention") for which I am making application for Letters Patent in the United States of America;*

*And, whereas I desire to assign a 100% undivided interest in said Invention, said application disclosing the Invention and any Letters Patent which may be granted therefor to the above-identified Assignee, and whereas said Assignee is desirous of acquiring the entire right, title and interest in the same;*

Now, this indenture witnesseth, that for the sum of **Ten** dollars  
(\$ **10.00** ), and other good and valuable consideration, the receipt whereof is hereby acknowledged;

*I hereby assign, sell and transfer a 100% undivided interest in said Invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee;*

*And I hereby authorize and request the Commissioner of Patents and Trademarks to issue said United States Letters Patent to said Assignee, as assignee of the whole right, title and interest thereto;*

*And I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;*

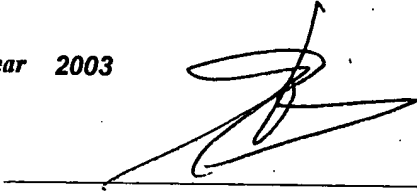
**Assignment of Rights in Invention**  
(Sole inventor; single assignee; without witness or notarization)

Docket No.  
576391-2001

Inventor	Residence of Inventor
Eduardo Diaz Del Rio Perez	C/Caleruega No. 3 28033 Madrid Spain
Assignee	Residence or Principal Place of Business of Assignee
Fusaco IP Sarl	p.a. DEV 2, Avenue de Gratta-Paille Casa postale 452 1000 Lausanne 30 Switzerland

*And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.*

Executed this 18th day of April, in the year 2003  
at New York, New York

  
(Signature of Inventor)  
Eduardo Diaz Del Rio Perez

**EXHIBIT 3**

**DECLARATION FOR UTILITY OR  
 DESIGN  
 PATENT APPLICATION  
 (37 CFR 1.63)**

☒ Declaration Submitted with Initial Filing OR ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16(e)))

Attorney Docket Number	576391-2001
First Named Inventor	Eduardo Diaz Del Rio Perez
<b>COMPLETE IF KNOWN</b>	
Application Number	/
Filing Date	
Art Unit	
Examiner Name	

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**Explosion-Inhibiting Articles of Manufacture**

the specification of which (Title of the Invention)

☒ is attached hereto

OR

☐ was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above:

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application		Foreign Filing Date	Priority	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

**DECLARATION — Utility or Design Patent Application**

Direct all correspondence to:

Customer Number  
or Bar Code LabelOR ☐

Correspondence address below

PATENT TRADEMARK OFFICE

Name **David M. McConoughey**Address **Stoll, Miskin & Badic, 350 Fifth Ave Ste 4710**City **New York**State **NY**ZIP **10118-4710**Country **US**Telephone **212.268.1530**Fax **212.268.1530**

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**NAME OF SOLE OR FIRST INVENTOR :**☐ A petition has been filed for this unsigned inventor

Given Name

(first and middle [if any]) **Eduardo**

Family Name

or Surname **Diaz Del Rio Perez**Inventor's  
Signature Date **April 18, 2003**Residence: City **Madrid**

State -

Country **Spain**Citizenship **Spain**Mailing Address **C/Caleruega No. 3**City **28033 Madrid**

State

ZIP

Country **Spain****NAME OF SECOND INVENTOR:**☐ A petition has been filed for this unsigned inventor

Given Name

(first and middle [if any])

Family Name

or Surname

Inventor's  
Signature

Date

Residence: City

State

Country

Citizenship

Mailing Address

City

State

ZIP

Country

☐ Additional inventors are being named on \_\_\_\_\_ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

**EXHIBIT 4**





UNITED STATES POSTAL SERVICE ®



International delivery  
by FedEx Express

USPS®

GXG International Air Waybill

1 From Please print and press hard.	
Date	MM/DD/YY 09/29/2006
Sender's Name	DAVID M. McCANN/NOT Phone 862.368.7803
Company	3/6 Stoll, Miska & Barte
Address	350 FIFTH AVE STE 4710
City	New York
State	NY
Country	US
ZIP Code	10118-4710
2 To	
Recipient's Name	EDUARDO DIAZ/BL-Sub PBA/ET Phone 011.34.91.766.6694
Company	
Address	CALLE CALERUEGA No. 3
City	MADRID
State/Province	
ZIP Code	28033
Country	SPAIN
Recipient's Tax ID Number for Customs Purposes (if applicable)	
S.A. GESTION/AMIN	
For tracking go to the USPS Web site at www.usps.com/shipping/trackandconfirm.htm or call 1.800.222.1811.	
3 Shipment Information	
Documents	Non-Documents
<input checked="" type="checkbox"/> Specific Description Including Number of Each Item (REQUIRED)	<input type="checkbox"/> All contents of this container may be required to inspect.
Country of Manufacture	Value for Customs (US \$)
US	100
4 Required Signature	
We agree that the USPS terms and conditions (on the back of the Sender's Copy of this Air Waybill and in the Global Express Guaranteed Service Guide) and certain international treaties, including the Warsaw Convention, where applicable, apply and limit the liability of USPS and FedEx for loss and damage. We understand that USPS and FedEx DO NOT TRANSPORT CASH. We certify that this package does not contain any hazardous or restricted materials prohibited by postal regulations and does not require the filing of Electronic Export Information (EEI) (formerly Shippers' Export Declaration/SEEI) and that the certificate given in the Shipment Information section are as declared. Submission of false information may result in civil or criminal penalties (USC 1801, 3161, 3201).	
Sender's Signature: [Signature]	
5 Postage and Fees	
Postage	10.92
Insurance	1000
Signature Fee	0.60
Other	0.00
Total	11.52
6 Tracking and Confirmation	
Tracking Number	9505 6982 6929 5009
Confirmation Number	

PART 10058  
Rev. 04/01/00  
PSN 10058-100  
Issued 1/19/01 (04) USPS  
Version 2.1.4/2000

Sender's Copy

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PATENT TRADEMARK COPYRIGHT  
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UNFAIR COMPETITION

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Friday, September 29, 2006.

**By U.S. Postal Service Global Express Guaranteed: 8269795004**

Eduardo Diaz Del Rio Perez  
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Spain

**Re:** FUSACO IP, Sarl  
United States National Phase of International  
Patent Application No. PCT/IB04/001539  
Matter No. 576391-2003

Dear Eduardo:

The United States Patent and Trademark Office is requiring that a Declaration signed by you as inventor in the above-identified U.S. patent application be filed.

A Declaration for your execution is enclosed. (A copy of the International Application as published is enclosed.) Please sign and date the Declaration and FAX it to me at 212.268.1593 and send me the signed original by mail.

Under the Assignment executed by you on April 18, 2003, you have an obligation to sign such a Declaration. (A copy of the Assignment was previously provided to you as an enclosure with our letter of April 9, 2004 to you.)

The Assignment states

I [Eduardo Diaz Del Rio Perez] hereby assign, sell, and transfer a 100% undivided interest in said invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the

United States and countries foreign thereto, unto said Assignee  
[FUSACO IP, Sarl]

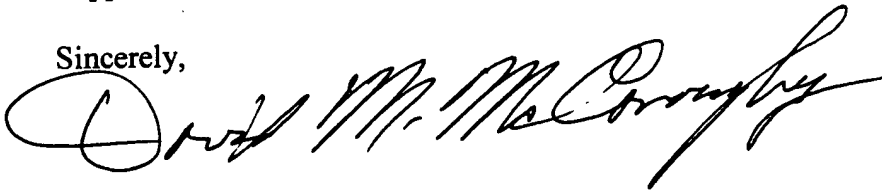
The Assignment further states

... I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;

And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.

I appreciate your cooperation and thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "David M. McCrory". The signature is fluid and cursive, with a large initial "D" and a long, sweeping underline.

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# DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

Declaration  
Submitted  
With Initial  
Filing

OR

Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)Attorney Docket  
Number

576391-2003

First Named Inventor

DIAZ DEL RIO PEREZ, Eduardo

**COMPLETE IF KNOWN**

Application Number

10/553,663

Filing Date

04/16/2004

Art Unit

N. A.

Examiner Name

N. A.

**I hereby declare that:**

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Explosion-inhibiting Articles of Manufacture

(Title of the Invention)

the specification of which



is attached hereto

OR



was filed on (MM/DD/YYYY)

04/16/2004

as United States Application Number or PCT International

Application Number

PCT/IB04/001539

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
PCT/IB04/001539	IB	04/16/2004	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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**DECLARATION — Utility or Design Patent Application**Direct all  
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Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**NAME OF SOLE OR FIRST INVENTOR:**☐

A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])

Eduardo

Family Name or Surname

Diaz Del Rio Perez

Inventor's Signature

Date

October \_\_, 2006

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☐

Additional inventors or a legal representative are being named on the \_\_\_\_\_ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number  
WO 2004/091728 A1

(51) International Patent Classification<sup>7</sup>: A62C 3/06

(21) International Application Number:  
PCT/IB2004/001539

(22) International Filing Date: 16 April 2004 (16.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/463,763 18 April 2003 (18.04.2003) US

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(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
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PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
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ZW.

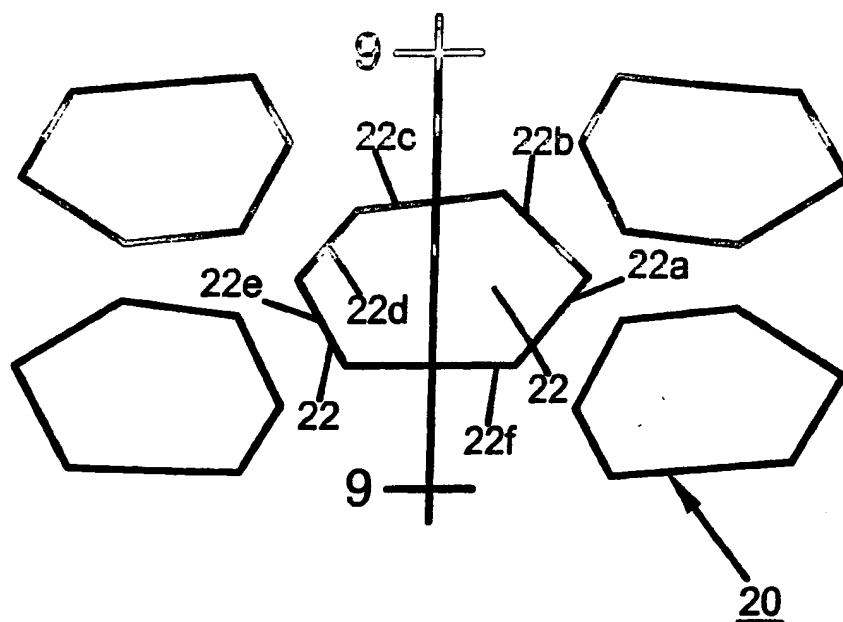
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
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ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted  
a patent (Rule 4.17(ii)) for the following designations AE,  
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,  
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,

[Continued on next page]

(54) Title: EXPLOSION-INHIBITING ARTICLES OF MANUFACTURE



(57) Abstract: Articles of manufacture formed of an apertured sheet material, the sheet material being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture, and having physical characteristics comprising: i) a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, ii) a heat conductivity of at least about 0.025 Cal/cm-sec. Preferably, the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at least one adjacent aperture. Further, the article preferably has a compressive yield of not more than about 10 percent.



MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO *patens* (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), *Eurasian patents* (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), *European patents* (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), *OAPI patents* (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA,

ZM, ZW, ARIPO *patens* (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), *Eurasian patents* (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), *European patents* (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), *OAPI patents* (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- of inventorship (Rule 4.17(iv)) for US only

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

**TITLE OF THE INVENTION**

Explosion-inhibiting Articles of Manufacture.

**CROSS-REFERENCES TO RELATED APPLICATIONS**

The benefit of U.S. Patent Application Serial No. 60/463763, filed 18 April 2003, is  
5 claimed. This application is a continuation of U.S. Patent Application Serial No. 60/463763, filed  
18 April 2003.

**STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT**

Not applicable.

**FIELD OF THE INVENTION**

10 The present invention relates to articles of manufacture for inhibiting the explosion of  
flammable fluids contained in closed containment vessels and, in particular, for inhibiting boiling  
liquid, expanding vapor explosions.

**BACKGROUND OF THE INVENTION**

Previous approaches to inhibiting the explosion of flammable liquid vapors, especially to  
15 inhibiting boiling liquid expanding vapor explosions, have failed to take into account the  
settlement and the compaction of explosion mitigation devices during the service of those devices.

**SUMMARY OF THE INVENTION**

The present invention comprises an article of manufacture comprising an apertured sheet  
material, the sheet material being provided with at least one row of a plurality of polygonal  
20 apertures, at least one of said polygonal apertures being irregular with respect to at least one  
adjacent polygonal aperture, and having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact  
surface of flammable fluids contained in a containing vessel,

ii. a heat conductivity of at least about 0.025 Cal/cm-sec.

25 Preferably, the inner peripheral length of at least one of the apertures is unequal to the inner  
peripheral length of at least one adjacent aperture. Further, the article preferably has a  
compressive yield of not more than about 10 percent.

In another embodiment, the foregoing sheet material is in the form of a cylindrical roll or  
bale



In a further embodiment, the foregoing sheet material is in the form of a spheroid

### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a top plan view of a sheet material for use in the present invention.

Figure 2 is a side elevation view taken in transverse section along lines 2-2 in Figure 1 of a  
5 sheet material for use in the present invention.

Figure 3 is a top plan view of an apertured sheet material for use in the present invention.

Figure 4 is a side elevation view taken in transverse section along lines 4-4 in Figure 3 of  
an apertured sheet material for use in the present invention.

Figure 5 is a side elevation view taken in longitudinal section along lines 5-5 in Figure 3  
10 of an apertured sheet material for use in the present invention.

Figure 6 is a top plan view of an expanded, apertured sheet material for use in the present  
invention.

Figure 7 is a side elevation view taken in transverse section along lines 7-7 in Figure 6 of  
an expanded, apertured sheet material for use in the present invention.

Figure 8 is a top plan view on an enlarged scale of portion of Figure 7 of an expanded,  
15 apertured sheet material for use in the present invention.

Figure 9 is a side elevation view taken in transverse section along lines 9-9 in Figure 8 of  
an expanded, apertured sheet material for use in the present invention.

Figure 10 is a top plan view of a waved, expanded, apertured sheet material for use in the  
20 present invention.

Figure 11 is a side elevation view taken in transverse section along lines 11-11 in Figure  
10 of a waved, expanded, apertured sheet material for use in the present invention.

Figure 12 is a side elevation view taken in longitudinal section along lines 12-12 in Figure  
10 of a waved, expanded, apertured sheet material for use in the present invention.

Figure 13 is a front perspective view of a cylindrical shape made in accordance with the  
25 present invention.

Figure 14 is a front elevation view of a cylindrical shape made in accordance with the  
present invention.

Figure 15 is a top plan view taken in horizontal section along lines 15-15 in Figure 14 of a  
30 cylindrical shape made in accordance with the present invention.

Figure 16 is a side elevation view of a spheroidal shape made in accordance with the  
present invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention comprises, as an article of manufacture, an apertured sheet material, the sheet material being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture, and having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel,

ii. a heat conductivity of at least about 0.025 Cal/cm-sec.

Preferably, the inner peripheral length of at least one of the apertures is unequal to the inner peripheral length of at least one adjacent aperture. Further, the article preferably has a compressive yield of not more than about 10 percent.

In this way, an apertured sheet material is provided that produces a configuration that is resistant to settling and to compaction. Such an article of manufacture is helpful in inhibiting a flammable fluid explosion in a closed containment vessel containing flammable fluid, particularly in inhibiting a boiling liquid, expanding vapor explosion (or "BLEVE".)

A sheet material for use in the present invention, and as illustrated in Figs. 1 & 2 by way of example, comprises a sheet of heat-conductive material, preferably having the aforesaid physical properties. The sheet has a flat, generally planar configuration with a thickness from about 0.01 mm (1 micron) to about 0.1 mm (10 microns), desirably from about 0.03 mm (3 microns) to about 0.07 mm (7 microns) and preferably from about 0.04 mm (4 microns) to about 0.05 mm (5 microns).

The sheet material desirably has good heat conductivity in order to adequately dissipate heat in inhibiting the explosion of flammable fluids contained in closed containers, particularly for inhibiting BLEVEs. The heat conductivity should be at least about 0.025 Cal/cm-sec, particularly for materials with a specific density of from about 2.8 g/cm<sup>3</sup> to about 19.5 g/cm<sup>3</sup>, and preferably from about 0.025 to about 0.95 Cal/cm-sec, particularly for materials with a specific density of from about 2.8 g/cm<sup>3</sup> to about 19.5 g/cm<sup>3</sup>.

The heat conductivity is nominally about 2.36 Watt/cm-deg (Kelvin) at 273 T.K. (degrees Kelvin) (for Aluminum)-The following can be used as candidate alloy or raw materials depending on the application:

Silver 4.28 Watt/cm-deg (Kelvin) at 273 T.K.,

Gold 3.2018 Watt/cm-deg (Kelvin) at 273 T.K.,

Copper 4.1 Watt/cm-deg (Kelvin) at 273 T.K.,

Stainless Steel 0.835 Watt/cm-deg (Kelvin) at 273 T.K., and

polymeric material

for a material with a density, for example, of 2.7 g/cm<sup>3</sup> (Al); 10.5 g/cm<sup>3</sup> (Silver), 19.3 g/cm<sup>3</sup> (Gold), 8.92 g/cm<sup>3</sup> (Copper), 7.86 g/cm<sup>3</sup> (Stainless Steel) or 0.9 to 1.5 g/cm<sup>3</sup> (polymeric material).

The sheet material is desirably relatively chemically inert to the contents of the closed container for the service life of the container and/or the residence period of the contents in the container. Materials may be metals and metallic alloys, such as aluminum, magnesium, copper, gold, silver or stainless steel, or nonmetallics, such as polymeric or plastic materials.

A slit sheet material for use in the present invention, and as is illustrated in Figs. 3, 4 & 5 by way of example, comprises a sheet material 10 having a plurality of parallel lines P (Fig. 3) of elongated rectangular apertures 12, preferably slots. Each rectangular aperture 12, and each line P of rectangular apertures 12, extends parallel to the longitudinal central axis of the sheet. Each rectangular aperture 12 in a line P of rectangular apertures 12 is spaced from the rectangular aperture 12 preceding it and the rectangular aperture 12 following it by an intermediate web 14 of solid, imperforate sheet material. In other words, in proceeding longitudinally along a line P of rectangular apertures 12, there is a rectangular aperture 12 followed by an intermediate web 14, followed by a rectangular aperture 12 followed by an intermediate web 14, et cetera.

In forming a sheet with polygonal apertures, the intermediate webs 14 of adjacent lines of rectangular apertures are offset with respect to each other so that in proceeding transversely across the sheet along a line T that is perpendicular to the longitudinal central axis of the sheet and that passes through an intermediate web 14 of an adjacent longitudinal line P of rectangular apertures 12,

- a. the transverse line T will pass across a rectangular aperture 12 of the next adjacent longitudinal line P of rectangular apertures 12,
- b. then through an intermediate web 14 of the next adjacent longitudinal line P of rectangular apertures 12,
- c. then across a rectangular aperture 12 of the next adjacent longitudinal line of rectangular apertures, et cetera.

In this way, the longitudinally extending rectangular apertures 12 alternate with intermediate webs 14 transversely across the sheet 10.

Preferably, the length of each longitudinally extending rectangular aperture 12 in proceeding along a transverse line T of rectangular apertures 12 should be different from the length of the rectangular aperture 12 preceding it and the length of the rectangular aperture 12 following it. In other words, the length of each longitudinally extending rectangular aperture 12 is preferably different from the length of the next adjacent longitudinally extending rectangular

aperture 12 in a transverse line T across the width of the sheet. Further, with respect to each rectangular aperture 12, the length of each of the four most adjacent rectangular apertures 12 in the two most adjacent longitudinal lines P of rectangular apertures 12 should preferably also be different from that of the rectangular aperture 12.

5           The lengths of the respective longitudinally extending rectangular apertures 12 in a transverse line T across the width of the sheet may be random with respect to each other. Alternatively, the lengths of each respective longitudinally extending rectangular aperture 12 may increase progressively in length in a transverse line T across the width of the sheet or decrease in length. In one alternative embodiment, the lengths of each respective longitudinally extending  
10       rectangular aperture 12 increase progressively in length in a transverse line T across the width of the sheet and the lengths of each respective longitudinally extending rectangular aperture 12 in the next adjacent transverse line T decreases progressively in length across the width of the sheet.

          The length of the apertures 12 is nominally from about 10 to about 15 mm., desirably from about 12 mm. to about 15 mm., and preferably, from about 13 mm. to about 15 mm. In this way,  
15       an aperture of 10 mm. might be followed by one of 10.033 mm, followed by one of 10.06 mm. The width of each rectangular aperture, or slot, may be from about .02 mm. to .06 mm, desirably from about .03 mm. to about .05 mm., and, preferably, from about .04 mm. to about .05 mm. The spacing between the rows of apertures may be varied based on the properties of the material used for the sheet.

20           The intermediate web between apertures, in turn, is from about 2.5 mm to about 4.5 mm. In this way, an intermediate web of 3 mm. might be followed by one of 3.5 mm, followed by one of 4 mm.

          In this way, irregularity is induced in the expanded apertured sheet that produces configurational resistance to settling and compaction.

25           A slit sheet material for use in the present invention, and as illustrated in Figs. 6 through 9 by way of example, is converted into an expanded, apertured (or fenestrated) sheet material 20 of the present invention that is provided with a plurality of many-sided, or polygonal apertures 22, such as, for example and as illustrated, hexagonal apertures. At least one polygonal aperture is irregular with respect to at least one adjacent polygonal aperture.

30           For example, the sum of the lengths of the inner edges of the sides of a polygonal aperture 22, for example lengths 22a, 22b, 22c, 22d, 22e, and 22f in Fig. 9, determine an inner peripheral length of a polygonal aperture 22. The inner peripheral length of each polygonal aperture 22 in proceeding along a transverse line T of polygonal apertures 22 should be different from the inner peripheral length of the polygonal aperture 22 preceding it and the inner peripheral length of the

polygonal aperture 22 following it. In other words, the inner peripheral length of each polygonal aperture 22 is different from the inner peripheral length of the next adjacent polygonal aperture 22 in a transverse line across the width of the sheet. Further with respect to each polygonal aperture 22, the inner peripheral length of each of the four most adjacent polygonal apertures 22 in the two most adjacent longitudinal lines of polygonal apertures 22 should preferably also be different from that polygonal aperture 22.

The inner peripheral lengths of the respective polygonal apertures 22 in a transverse line T across the width of the sheet may be random with respect to each other. Alternatively, the inner peripheral lengths of each respective polygonal aperture 22 may increase progressively in inner peripheral length in a transverse line T across the width of the sheet or decrease. In one alternative embodiment, the inner peripheral lengths of each respective polygonal aperture 22 increase progressively in length in a transverse line T across the width of the sheet and the inner peripheral lengths of each respective polygonal aperture 22 in the next adjacent transverse line T decrease progressively in length across the width of the sheet.

The term "irregular" as it is used herein in the context of the inner peripheral length of at least one of said apertures being unequal to the inner peripheral length of at least one adjacent aperture means that the numerical value of the inequality of one inner peripheral length with respect to the other inner peripheral length is greater than the variation in inner peripheral length produce by manufacturing variation or manufacturing tolerance. In other words, the inequality is intentional rather than random or inherent manufacturing variation.

While the irregularity of at least one polygonal aperture with respect to at least one adjacent polygonal aperture has been described in terms of the inner peripheral length of at least one of said apertures being unequal to the inner peripheral length of at least one adjacent aperture, it should be understood that irregularity can also be produced in other ways, such as having a different number of sides on the polygon (such as a pentagon or a heptagon versus a hexagon) or the length of a side of a polygonal aperture being different from the corresponding side of an adjacent polygonal aperture (i.e., greater than manufacturing variation or tolerance as previously stated) or the angle between two adjacent sides of a polygonal aperture being different from the corresponding angle between the corresponding two sides of an adjacent polygonal aperture. For example, the respective lengths of the side edges of the apertures may not all be equal, i.e., at least one side may not be the same length as any of the other sides, thereby providing an aperture with a configuration such as an irregular polygon.)

In this way, when multiple expanded, apertured sheets are placed on top of each other, they are unable to align polygonal apertures and nest into each other, settling and thereby reducing the effective thickness of the multiple sheets 20.

The expanded, apertured (or fenestrated) sheet material 20 of the present invention  
5 desirably has a compression yield, or resistance to compaction (i.e., permanent deformation under compressive load), of not more than 10 percent. Ideally, however, there is essentially no compressive yield in service.

The expanded, apertured sheet material 20 is formed by tensioning slotted sheet material  
10 over large wheel of a varying diameter positioned in such a way as to regulate the spreading of the sheet material to an additional width 50% to 100 % that of the raw sheet material width so as to ensure the resulting openings form a plurality of polygonal apertures 22 as aforesaid.

The expanded, apertured sheet material 20 desirably has an effective surface area per unit volume from at least about 2,000 times the contact surface of flammable liquid/ vapors and gases contained in closed containers, particularly for inhibiting boiling liquid, expanding vapor  
15 explosions, and preferably from at least about 3,000 times the contact surface of flammable liquid/ vapors and gases contained in closed containers. The term "contact surface" refers to the surface area of the containment vessel that is in contact with the gaseous, aerosol or vapor phase of the flammable fluid that is contained in the containment vessel. Normally the flammable fluids (liquid, vapor, aerosol or gas ) are in contact with the surface areas of the walls of the container  
20 containing the flammable fluid. The insertion of the finished expanded, apertured sheet material increases the surface area of contact with the flammable fluid by at least about 2,000 times this contact surface area, preferably at least about 3,000 times this contact surface area. This ratio is significant and to compromise this proportion of contact relative to the specific fluid in question is to risk a BLEVE. This area varies in relation to the heat conductivity and compressive yield  
25 strength of the material used.

In one embodiment, expanded, apertured sheet material 20 for use in the present invention, and as is illustrated in Fig. 16 by way of example, may be formed into a shape that comprises a body 100 with a generally spheroidal external configuration or shape.

The internal configuration of the generally spheroidal body 100 comprises at least one  
30 strip of the aforesaid expanded, expanded sheet material that is folded and/or crimped and cupped to form said spheroidal shape. The generally spheroidal shape may be formed using a section of expanded, apertured sheet material of a size proportional to about 20% of the width of the expanded, apertured sheet material.

The outer spherical periphery of the spheroid 100 encloses a volume. The surface area of the material contained within this periphery, i.e., inside the spheroid, subject to the application design requirement, is at least about 1.5 square centimeters per cubic centimeter of said volume or larger as required. The surface area of the material should be at least about 2,000 times the contact surface of flammable fluid contained in the enclosing container of those flammable fluid, particularly for inhibiting BLEVEs.

The spheroid 100 desirably has a compression yield, or resistance to compaction (i.e., permanent deformation under compressive load), of not more than 10 percent. Ideally, however, there is essentially no compressive yield in service.

The structural strength of the final product can also be modified by using a different heat hardness in the sheet material.

In an alternative embodiment of the present invention, expanded, apertured sheet material 20 for use in the present invention, and as illustrated in Figs. 10 through 12 by way of example, is provided with a transverse undulating, or sinusoidal, wave 42 formed in it and the waved, expanded, apertured sheet material 40, as illustrated in Figs. 13 through 15 by way of example, is helically wound into a cylindrical shape 200, such as a cylindrical bale. The cylindrical shape 200 is generally circular in transverse section (Fig. 14) and generally rectangular in longitudinal section (Fig. 15.) In a further form of this cylindrical embodiment, a flat expanded, apertured sheet material may be wound into the cylindrical form. In a still further form (Figs. 13-15) of this cylindrical embodiment, a sheet of flat expanded, apertured sheet material 202 and a sheet of waved, expanded, apertured sheet material 204 may be wound into the cylindrical form, thereby forming alternate layers of flat and waved expanded, apertured sheet material in the cylindrical shape.

Because of the wave 42 formed in the sheet material 40, with the sheet material 40 helically wound, the wave 42 causes an increase in the effective diameter of the cylinder 200. In this way, the effective surface area contained within a given outer periphery of the cylinder 200 is increased. This provides large included volume cylinders 200 with low mass and high internal effective area.

The cylinder 200 desirably has a compression yield, or resistance to compaction (i.e., permanent deformation under compressive load), of not more than 10 percent. Ideally, however, there is essentially no compressive yield in service.

The imperforate starting sheet material 1 may be supplied as a continuous, non-perforated web of sheet material. Then, rectangular apertures 12, or slots, are formed in the continuous web in the aforesaid configuration, such as by slitting. Then, the slotted web 10 may be expanded

transversely by tensioning the sheet material 10 transversely, such as over a wheel positioned in such a way as to regulate the spreading of the sheet material to an additional width 50% to 100 % that of the raw sheet material width so as to ensure the resulting openings form a plurality of

5 polygonal apertures 22 of irregularity as aforesaid. Adjusting the position and tension of the expanding wheel on the production machine does this. By doing this, the result is the ability to have the walls of the finished honeycomb pattern more or less more erect, thereby increasing the compressive strength of the finished expanded, apertured sheet material 20.

10 Optionally, the expanded, apertured web 20 may have a sinusoidal transverse wave 42 formed in it. The form of the wave 42 is introduced or impressed into the lengths of the sheet material 20 as a series of transverse kinks or waves 42 along the length of the web that looks like waves when the finished product is spooled.

Cylindrical shapes 200 may be formed by winding the aforesaid expanded, apertured sheet material.

15 Spheroid shapes 100 may be made by feeding the sheet material 20 provided with a plurality of rows of a plurality of parallel apertures 22, the longitudinal central of each being parallel to the longitudinal central axis of the sheet, into a machine using a mechanical device comprising two semi-circular rimmed sections with the working sections opposing each other. One is a stationary semi circular die of a variable radius with a concave working edge. The other is a rotating 360 degree circular die with a concave working edge with a friction surface. The  
20 rotation of the circular die against the fixed die forms the sheet material into a tube shape. As the sheet material is drawn through the aperture formed by the interfacing of the circular die rotating against the fixed die, the rotating die grabs a length of sheet material, determined by the material volume required for the diameters of the two semi-circular rimmed sections of the dies. and tumbles the expanded sheet material into a generally spheroidal shape.

25 The expanded, apertured sheet material of the present invention may be used in the following applications:

1. Cylinders of expanded, apertured sheet material (netting) loaded into large closed vessels, tanks, cans, drums, bulk carriers, fuel tanks of all description, pipe lines, piping, tubing, construction, insulation and in other applications where flammable fluids, such as,  
30 flammable liquids, vapors, aerosols or gases are used, stored, or transported;
2. Spheroids of expanded, apertured sheet material loaded as spheroids into small closed vessels, gas cylinders, gas bottles, fuel tanks of all description, bulk carriers, construction, insulation and in other applications where flammable fluids, such as flammable liquids, vapors, aerosols or gases are, used, stored or transported;



3. Solar panels; 4. Insulation; 5. Construction material; 6. Sound proofing; 7. Cooling elements for computer equipment; 8. Filters; 9. Heat Exchangers; 10. Fire-proof cloth; 11. Fire-retardants; 12. Aircraft; 13. Refineries; 14. Pipelines; 15. Gasoline stations; 16. Gas tanks and gas cylinders; 17. Gas vehicles; and 18. Bulk fluid carriers and vessels.
-

## CLAIMS

What is claimed is:

1. An explosion-inhibiting article of manufacture comprising an apertured sheet material, said sheet material
  - 5 a. being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture,  
and
  - b. having physical characteristics comprising
    - 10 i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and
    - ii. a heat conductivity of at least about 0.025 Cal/cm-sec.
2. An explosion-inhibiting article of manufacture in accordance with claim 1, wherein the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at  
15 least one adjacent aperture.
3. An explosion-inhibiting article of manufacture in accordance with claim 1, wherein the material has a density from about 2.8 g/cm<sup>3</sup> to about 19.5 g/cm<sup>3</sup>.
4. An explosion-inhibiting article of manufacture in accordance with claim 1, wherein said article has a compressive yield of not more than about 10 percent.
- 20 5. An explosion-inhibiting article of manufacture having a generally spheroidal shape and comprising an apertured sheet material, said sheet material
  - a. being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture,  
25 and
  - b. having physical characteristics comprising
    - i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and
    - ii. a heat conductivity of at least about 0.025 Cal/cm-sec.
- 30 6. An explosion-inhibiting article of manufacture in accordance with claim 5, wherein the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at least one adjacent aperture.

7. An explosion-inhibiting article of manufacture in accordance with claim 5, wherein the material has a density from about  $2.8 \text{ g/cm}^3$  to about  $19.5 \text{ g/cm}^3$ .

8. An explosion-inhibiting article of manufacture in accordance with claim 5, wherein said article has a compressive yield of not more than about 10 percent.

9. An explosion-inhibiting article of manufacture having a generally cylindrical shape and comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture,

and

b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about  $0.025 \text{ Cal/cm-sec}$ .

10. An explosion-inhibiting article of manufacture in accordance with claim 9, wherein the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at least one adjacent aperture.

11. An explosion-inhibiting article of manufacture in accordance with claim 9, wherein the material has a density from about  $2.8 \text{ g/cm}^3$  to about  $19.5 \text{ g/cm}^3$ .

12. An explosion-inhibiting article of manufacture in accordance with claim 9, wherein said article has a compressive yield of not more than about 10 percent.

13. An explosion-inhibiting article of manufacture comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures,

and

b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about  $0.025 \text{ Cal/cm-sec}$ ,

said article having a compressive yield of not more than about 10 percent.

14. An explosion-inhibiting article of manufacture having a generally spheroidal shape and comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures,

and

b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about 0.025 Cal/cm-sec,

5 said article having a compressive yield of not more than about 10 percent.

15. An explosion-inhibiting article of manufacture having a generally cylindrical shape and comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures,  
and

10 b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about 0.025 Cal/cm-sec,

said article having a compressive yield of not more than about 10 percent.

15

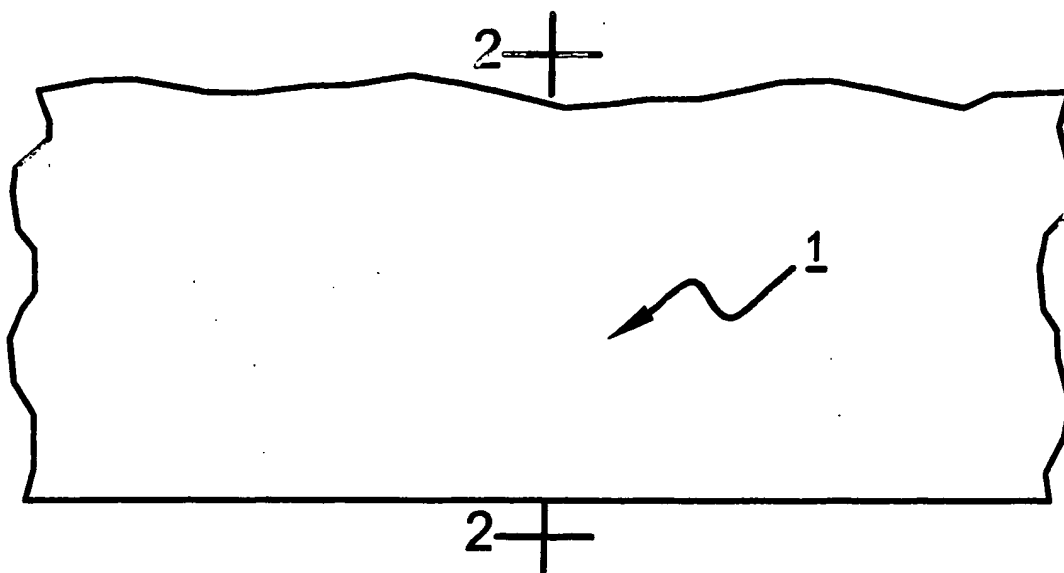
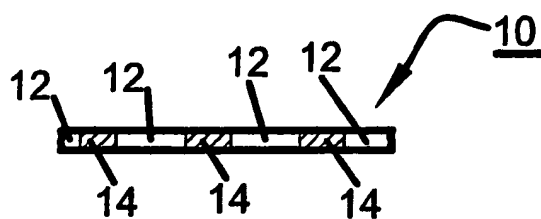
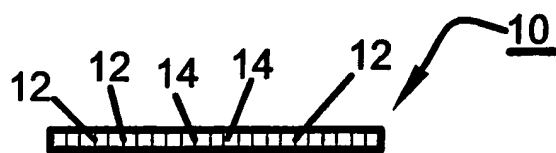
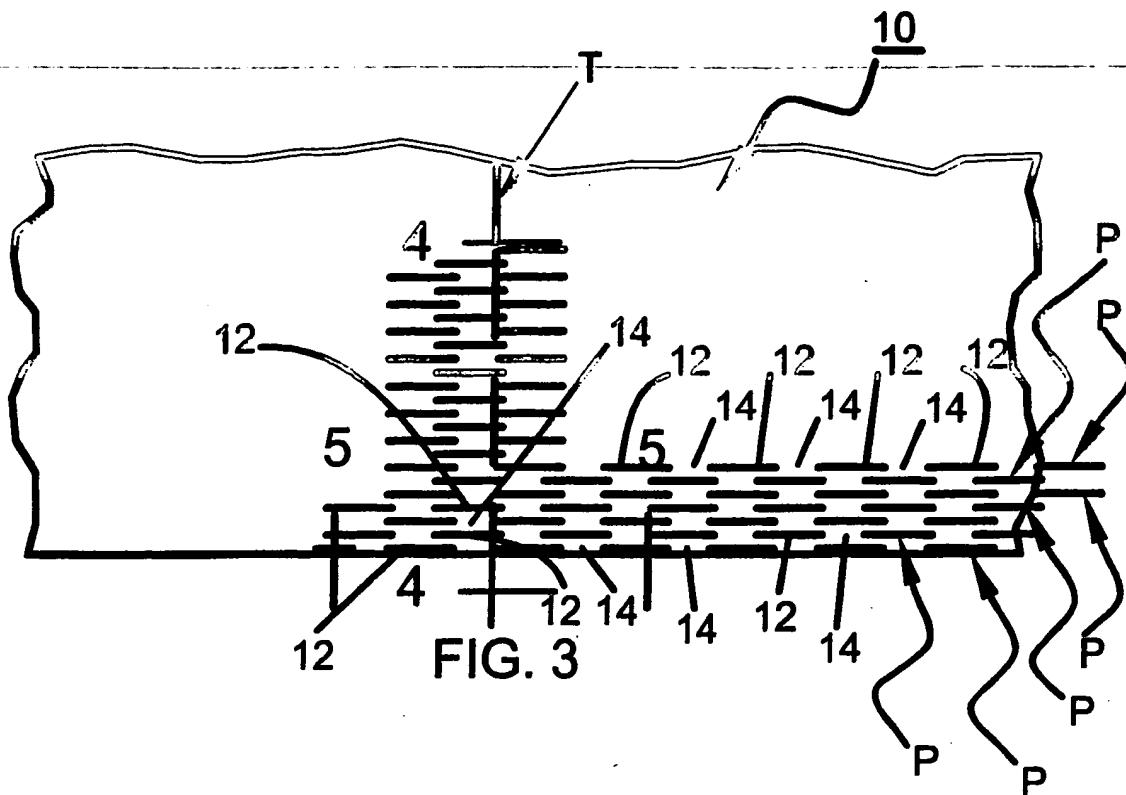


FIG. 1



FIG. 2



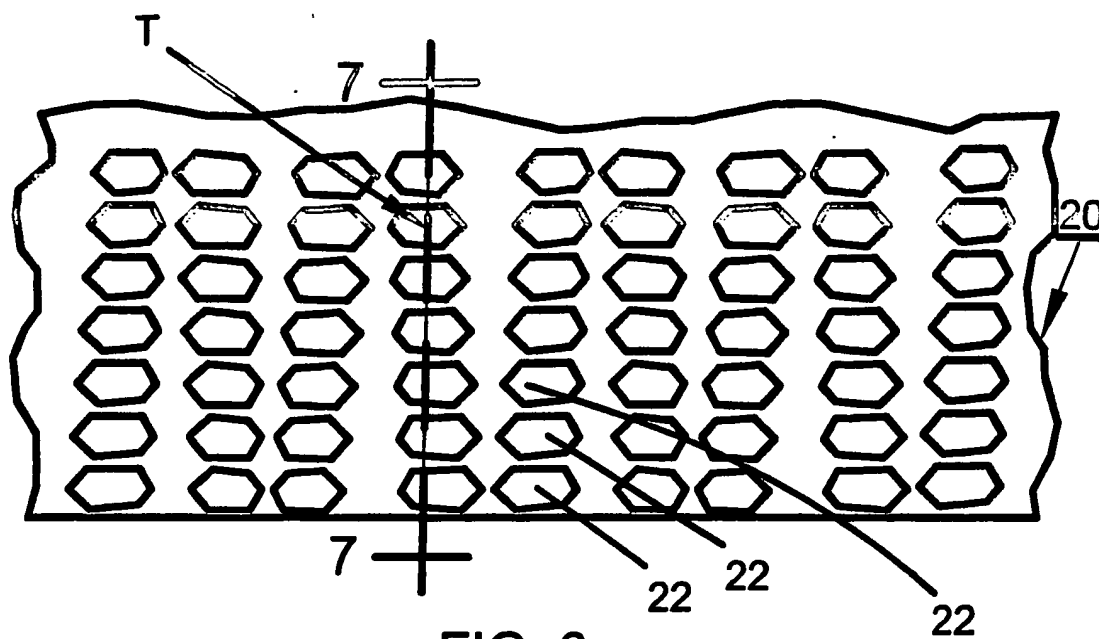


FIG. 6

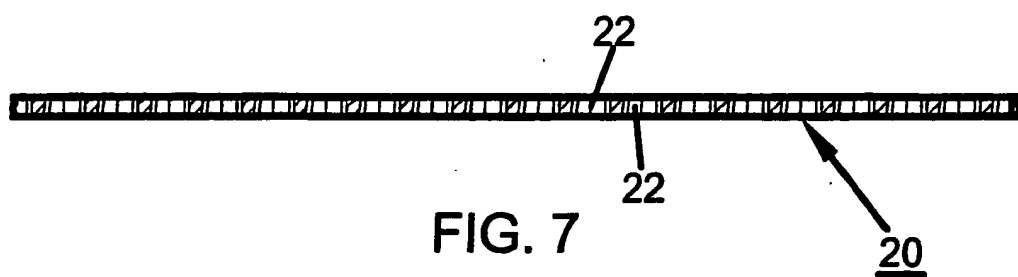
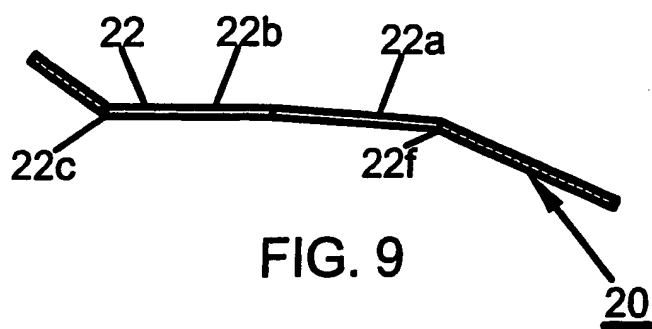
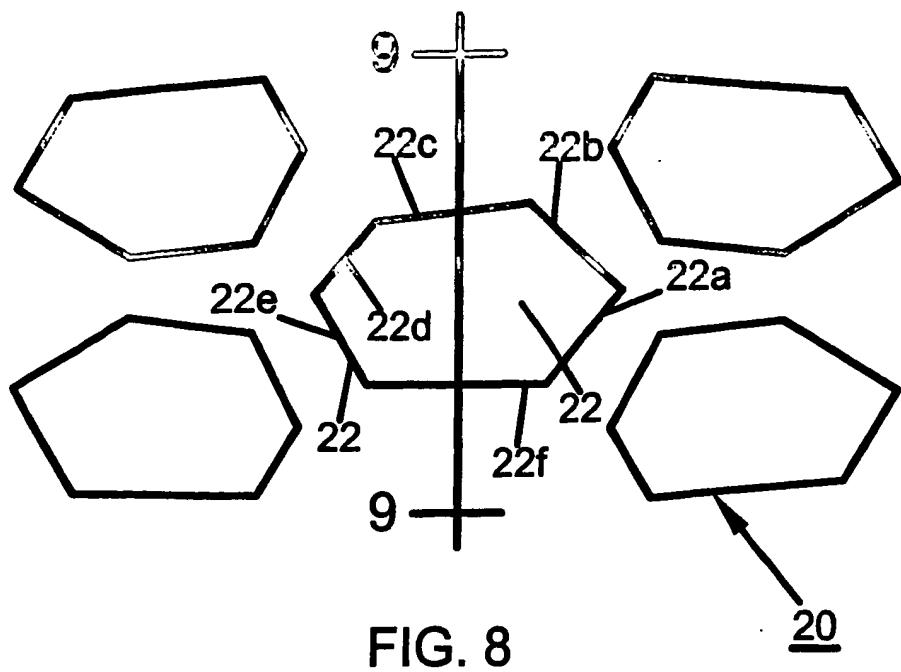
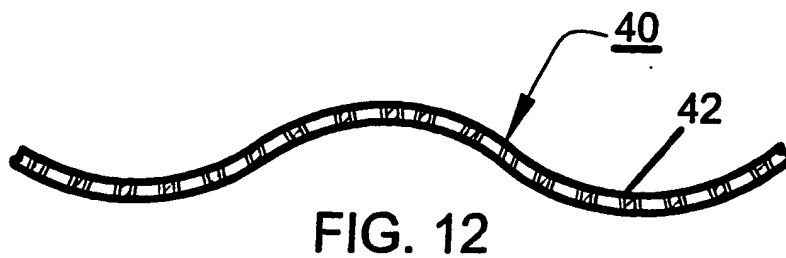
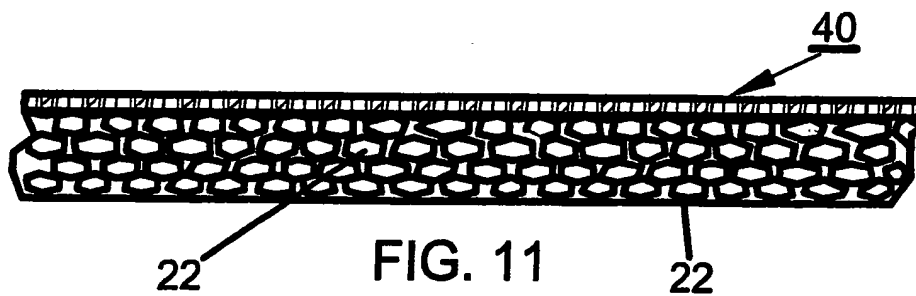
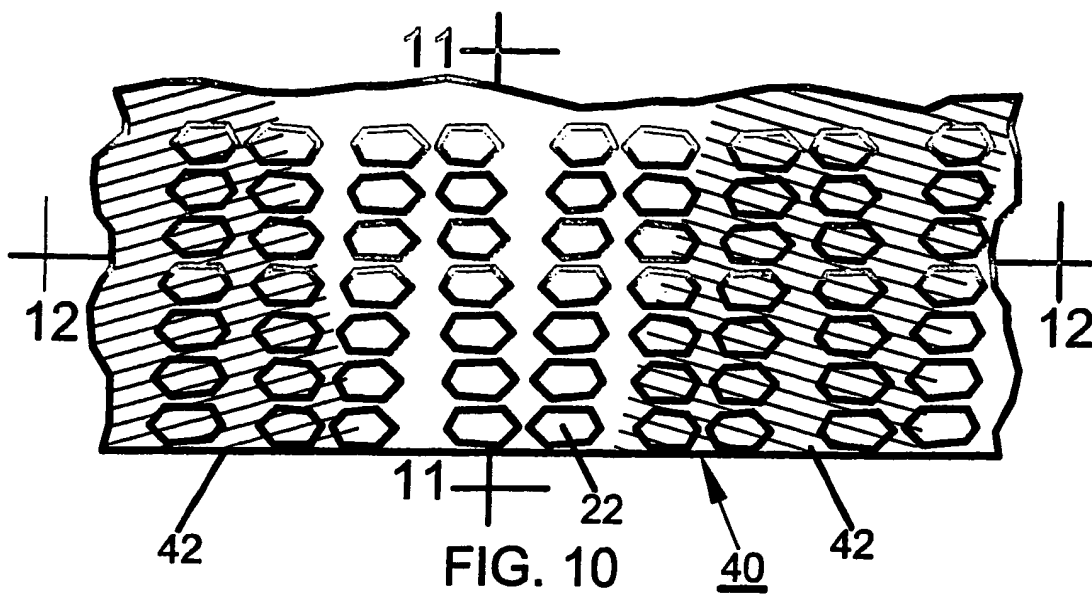


FIG. 7







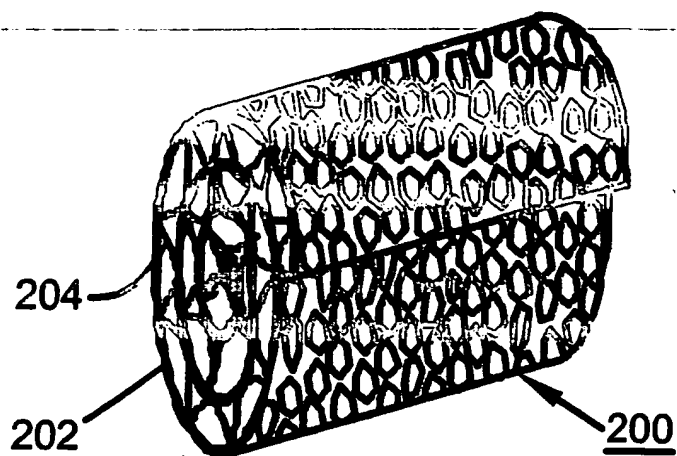


FIG. 13

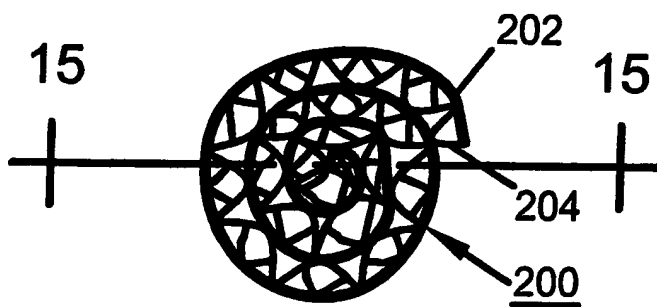


FIG. 14



FIG. 15

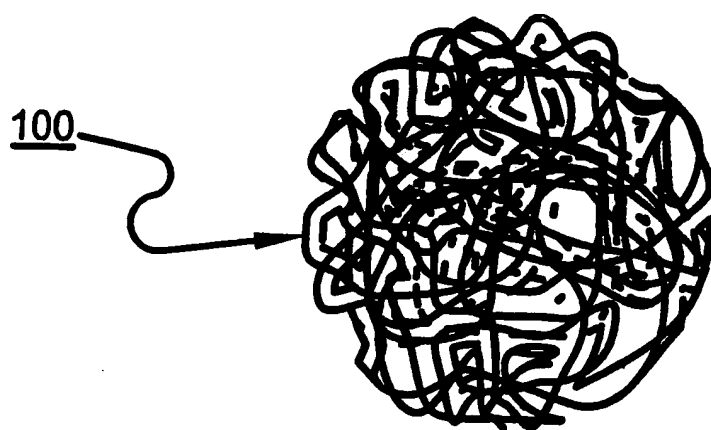


FIG. 16

**EXHIBIT 5**

From: "U.S. Postal Service\_" <U.S. Postal\_Service@usps.com>  
To: dmccconou@ix.netcom.com  
Subject: USPS Shipment Info for 8269 7950 04  
Date: Oct 2, 2006 7:10 PM

This is a post-only message. Please do not respond.

David McConoughey has requested that you receive a Track & Confirm update, as shown below.

Track & Confirm e-mail update information provided by the U.S. Postal Service.

Label Number: 8269 7950 04

Service Type: Global Express Guaranteed

Shipment Activity	Location	Date & Time
Shipment Delivered	SPAIN	10/02/06 10:18am
Transferred Through	SPAIN	10/02/06 7:08am
Transferred Through	SPAIN	10/01/06 12:09pm
Shipment Picked Up	FRANCE	09/30/06 7:27pm
Transferred Through	FRANCE	09/30/06 7:27pm
Customs Clearance Process Complete	FRANCE	09/30/06 7:27pm
Departing Origin	UNITED STATES	09/30/06 4:44am
Departing Origin	UNITED STATES	09/30/06 2:07am
Departing Origin	UNITED STATES	09/29/06 11:44pm
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Transferred Through	UNITED STATES	09/29/06 10:15pm
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Shipment Picked Up	UNITED STATES	09/29/06 9:04pm
Enroute	JAMAICA NY 11499	09/29/06 8:27pm
Enroute	NEW YORK NY 10199	09/29/06 6:14pm
Acceptance	NEW YORK NY 10001	09/29/06 2:06pm

Reminder: Track & Confirm by email

Date of email request: 09/30/06

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USPS has not verified the validity of any email addresses submitted via its online Track & Confirm tool.

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**EXHIBIT 6**

From: "David M. McConoughey, Esq." <dmccnou@ix.netcom.com>  
To: "\"Eduardo Diaz Del Rio Perez\""  
Subject: U.S. Patent Application Corresponding to International Patent Application No. PCT/IB04/01539 (filed 04/16/2004)  
Date: Sep 25, 2006 4:06 PM  
Attachments: winmail.dat

Dear Eduardo:

The United States Patent and Trademark Office is requiring that a Declaration signed by you as inventor in the above-identified U.S. patent application be filed. (A copy of the type of form to be signed is attached.)

Under the Assignment executed by you on April 18, 2003, you have an obligation to sign such a Declaration. (A copy of the Assignment was previously provided to you as an enclosure with our letter of April 9, 2004 to you.)

The Assignment states

I [Eduardo Diaz Del Rio Perez] hereby assign, sell, and transfer a 100% undivided interest in said invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee [FUSACO IP, Sarl] The Assignment further states

... I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;

And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.

We previously sent you papers on April 9, 2004 for filing the PCT patent application based on the prior U.S. provisional patent application filed April 18, 2003, including a request that you sign and date an enclosed Declaration: Inventorship (Sheet No. 7 of the Request) and you refused to sign that Declaration.

I would appreciate you telling me by return email whether you will sign a Declaration of the form attached or not before I go to the trouble of preparing the document and sending it to you for signature.

Sincerely,

Dave

David M. McConoughey, Esq.  
Stoll, Miskin & Badie  
350 Fifth Ave Ste 4710  
New York, NY 10118-4710

TEL: 212.268.1530  
FAX: 212.268.1593  
E-mail: dmccnou@ix.netcom.com



From: "David M. McConoughey" <dmcconou@ix.netcom.com>  
To: eduardoexplocontrol@telefonica.net  
Subject: U.S. Patent Application Corresponding to International Patent Application No.  
PCT/IB04/01539 (filed 04/16/2004)  
Date: Sep 26, 2006 9:13 AM  
Attachments: sb0001.pdf

Dear Eduardo:

Enclosed is a duplicate copy of the Declaration form I sent you yesterday with my email to you.

Sincerely,

David

David M. McConoughey, Esq.  
Stoll, Miskin & Badie  
Suite 4710  
Empire State Building  
350 Fifth Avenue  
New York, NY 10118-4710  
Telephone: 212.268.1530

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**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☐

Declaration  
Submitted  
With Initial  
Filing

OR

☐

Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)

Attorney Docket  
Number

First Named Inventor

COMPLETE IF KNOWN

Application Number

Filing Date

Art Unit

Examiner Name

**I hereby declare that:**

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

(Title of the Invention)

the specification of which

☐

is attached hereto

OR

☐

was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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☐

Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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**DECLARATION — Utility or Design Patent Application**

Direct all correspondence to: ☐ The address associated with Customer Number:  OR ☐ Correspondence address below

Name

Address

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**NAME OF SOLE OR FIRST INVENTOR:**

☐ A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])

Family Name or Surname

Inventor's Signature

Date

Residence: City

State

Country

Citizenship

Mailing Address

City

State

Zip

Country

☐ Additional inventors or a legal representative are being named on the \_\_\_\_\_ supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

## Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

**EXHIBIT 7**

From: "David M. McConoughey" <dmcconou@ix.netcom.com>  
To: "O'Connor Daniel J."  
Subject: FUSACO IP, Sarl - U.S. National Phase Patent Application  
Date: Nov 6, 2006 12:26 PM

Dan:

On September 29, 2006 , I asked Eduardo Diaz Del Rio Perez by letter to execute a declaration in the U.S. national phase patent application pursuant to his obligation to do so under the Assignemnt of April 18, 2003. Since I have received no response to that letter nor have I received the requested executed declaration, I have concluded that none will be forthcoming Sr. Diaz Del Rio Perez. Could you please confirm that with your client and advise me of such so that I can proceed accordingly. I would appreciate a response by Wednesday, November 8 so that I can proceed.

Regards,

Dave

David M. McConoughey, Esq.  
Stoll, Miskin & Badie  
Suite 4710  
Empire State Building  
350 Fifth Avenue  
New York, NY 10118-4710  
Telephone: 212.268.1530

DAVID M. McCONOUGHEY, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/553663	I.A. 04/16/2004	Eduardo DIAZ DEL RIO PEREZ	576391-2003	3780
			EXAMINER	
			N.A.	
			ART UNIT	PAPER NUMBER
			N.A.	

**DECLARATION OF DAVID M. McCONOUGHEY**

**IN SUPPORT**

**OF**

**PETITION BY ASSIGNEE**

**PURSUANT TO**

**35 U.S.C. § 118 AND 37 C.F.R. § 1.47**

David M. McConoughey declares as follows:

1. I am registered to practice before the U.S. Patent and Trademark Office and am counsel of record in the above-identified application and am counsel to FUSACO IP, Sarl with respect to the above-identified application.
2. The present application, Serial No. 10/553633, is the United States National Phase application of International Application No. PCT/IB04/01539, filed April 18, 2003 (the "International Application.") The International Application claims the priority of U.S. Provisional Patent Application No. 60/463763, filed April 18, 2003 (the "Provisional Application") and, on information and belief, is identical to the Provisional Application, except that the International Application refers to the Provisional Application on page 1 and the International Application introduces the claims with "What is claimed is:".
3. Exhibit 1 is a true copy of an Inventor's Declaration for the above-identified application.
4. Exhibit 2 is a true copy of an Assignment of the entire right, title, and interest in the invention of the above-identified patent application by Eduardo Diaz Del Rio Perez executed on April 18, 2003. Exhibit 2 is also part of a larger Agreement, a true copy of which is attached as Exhibit 2A solely for the sake of completeness.
5. Exhibit 3 is a true copy of an Inventor's Declaration in U. S. Provisional Patent Application Serial No. 60/463763, filed April 18, 2003 executed by Eduardo Diaz Del Rio Perez on April 18, 2003. On April 18, 2003, Eduardo Diaz Del Rio Perez, the individual identified as the sole



inventor in the present application, execute a Declaration in the application that was filed as, and became, the Provisional Application.

6. Exhibit 4 is a true copy of a letter of September 29, 2006 from myself to Eduardo Diaz Del Rio Perez at his last known address by U.S. Postal Service Global Express Guaranteed, enclosing an Inventor's Declaration for his execution and a copy of the International Application, as published and a U.S. Postal Service receipt for U.S. Postal Service Global Express Guaranteed service to Eduardo Diaz Del Rio Perez at his last known address.

7. Exhibit 5 is a true copy of confirmatory email from the U.S. Postal Service indicating that the documents of Exhibit 4 were delivered to the last known address of Eduardo Diaz Del Rio Perez on October 2, 2006.

8. Exhibit 6 is a true copy of an email to Eduardo Diaz Del Rio Perez on September 25, 2006 and an email to Eduardo Diaz Del Rio Perez on September 26, 2006, enclosing an electronic copy of the Declaration form. The email to Eduardo Diaz Del Rio Perez on September 25, 2006, *inter alia*, requested him to tell me whether he would sign an Inventor's Declaration or not.

9. On October 16, 2006, counsel for FUSACO received a telephone message from Daniel J. O'Connor of Baker and McKenzie LLP identifying himself as counsel for the inventor (Sr. Diaz Del Rio Perez.)

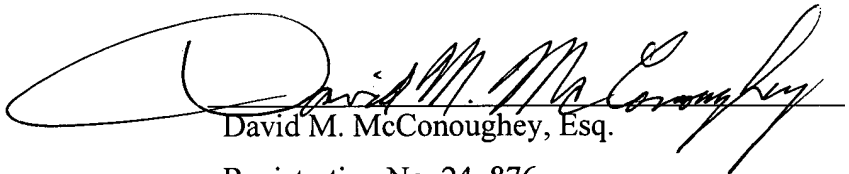
10. Exhibit 7 is a true copy of an email to Daniel J. O'Connor on November 6, 2006 asking him to confirm that the requested executed declaration would not be forthcoming from Sr. Diaz Del Rio Perez and advise counsel for FUSACO by November 8, 2006.

11. Counsel for the inventor and I had a brief telephone conversation on the afternoon of November 6 at the conclusion of which counsel for the inventor undertook to see what he could do with respect to the execution of the declaration by the inventor.

12. To date I have received no response whatsoever from Sr. Diaz Del Rio Perez regarding the execution of an Inventor's Declaration in the present application and no further response from counsel for the inventor.

13. All statements made by herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like somade are punishable by fine or imprisonment or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued therefrom.

November 9, 2006.

A handwritten signature in black ink, appearing to read "David M. McConoughey", is written over a horizontal line.

David M. McConoughey, Esq.

Registration No. 24, 876

Stoll, Miskin & Badie

350 Fifth Ave Ste 4710

New York, NY 10118-4710

Tel: 212.268.1530

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## **EXHIBIT 1**

# DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)

☐ Declaration  
Submitted  
With Initial  
Filing

OR

☒ Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)

Attorney Docket  
Number

576391-2003

First Named Inventor

DIAZ DEL RIO PEREZ, Eduardo

## COMPLETE IF KNOWN

Application Number

10/553,663

Filing Date

04/16/2004

Art Unit

N. A.

Examiner Name

N. A.

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Explosion-inhibiting Articles of Manufacture

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY)

04/16/2004

as United States Application Number or PCT International

Application Number

PCT/IB04/001539

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
PCT/IB04/001539	IB	04/16/2004	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.					

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing the form, call 1-800-PTO-9199 and select option 2.

### DECLARATION — Utility or Design Patent Application

Direct all correspondence to: ☐ The address associated with Customer Number:  OR ☒ Correspondence address below

Name

David M. McConoughey, Esq.

Address

c/o Stoll, Miskin & Badie, 350 Fifth Ave Ste 4710

City

New York

State

NY

ZIP

10118-4710

Country

US

Telephone

212.268.1530

Email

dmconou@bx.netcom.com

#### WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR:



A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])

Eduardo

Family Name or Surname

Diaz Del Rio Perez

Inventor's Signature

Date

October \_\_, 2006

Residence: City

Madrid

State

Country

Spain

Citizenship

Spain

Mailing Address

Calle Caceruega No. 3

City

Madrid

State

Zip

E-28033

Country

Spain



Additional inventors or a legal representative are being named on the

supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## **EXHIBIT 2**

**Assignment of Rights in Invention**  
**(Sole inventor; single assignee, without witness or notarization)**

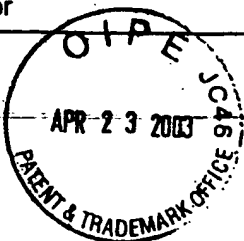
Docket No.  
576391-2001

Inventor

Residence of Inventor

Eduardo Diaz Del Rio Perez

C/Caleruega No. 3  
28033 Madrid  
Spain



Assignee

Residence or Principal Place of Business of Assignee

Fusaco IP Sarl

p.a. DEV  
2, Avenue de Gratta-Paille  
Casa postale 452  
1000 Lausanne 30  
Switzerland

*Whereas, I, the above-identified Inventor, have invented certain new and useful improvements in:*  
**Explosion-Inhibiting Articles of Manufacture**

*(hereinafter referred to as "Invention") for which I am making application for Letters Patent in the United States of America;*

*And, whereas I desire to assign a 100% undivided interest in said Invention, said application disclosing the Invention and any Letters Patent which may be granted therefor to the above-identified Assignee, and whereas said Assignee is desirous of acquiring the entire right, title and interest in the same;*

*Now, this indenture witnesseth, that for the sum of* **Ten** *dollars*  
*(\$ 10.00 ), and other good and valuable consideration, the receipt whereof is hereby acknowledged;*

*I hereby assign, sell and transfer a 100% undivided interest in said Invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee;*

*And I hereby authorize and request the Commissioner of Patents and Trademarks to issue said United States Letters Patent to said Assignee, as assignee of the whole right, title and interest thereto;*

*And I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;*

**Assignment of Rights in Invention**  
(Sole inventor; single assignee; without witness or notarization)

Docket No.  
576391-2001

Inventor

Residence of Inventor

Eduardo Diaz Del Rio Perez

C/Caleruega No. 3  
28033 Madrid  
Spain

Assignee

Residence or Principal Place of Business of Assignee

Fusaco IP Sarl

p.a. DEV  
2, Avenue de Gratta-Paille  
Casa postale 452  
1000 Lausanne 30  
Switzerland

*And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.*

*Executed this 18th day of April, in the year 2003*  
*at New York, New York*



(Signature of Inventor)

Eduardo Diaz del Rio Perez



## EXHIBIT 3

---

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## EXHIBIT 2A

## AGREEMENT

This Agreement to Assign entered into effective as of April 18, 2003 by and between

**Eduardo Diaz Del Rio Perez**, a citizen of Spain (Spanish Passport No. Q499096, Exhibit A) and having a place of residence at C/Caleruega No. 3, 28033 Madrid, Spain (hereinafter "**Inventor**")

and

**Fusaco IP Sàrl**, a Limited Liability Company (Swiss Federal Number CH-550-1033952-7, Exhibit B) organized and existing under the laws of Switzerland and having a business address at p.a. DEV, 2, Avenue de Gratta-Paille, Casa postale 452, 1000 Lausanne 30, Switzerland (hereinafter "**Company**");

### PREMISES

**WHEREAS Inventor and Company are forming a business relationship;**

**WHEREAS Inventor has scientific and technical expertise of value to Company and Inventor wishes to convey the benefits of his scientific and technical expertise to Company under the conditions set forth in this Agreement; and**

**WHEREAS Company wishes to acquire the benefits of Inventor's scientific and technical expertise under the conditions set forth in this Agreement,**

**NOW THEREFORE, for and in consideration of the foregoing premises and of the covenants, the terms and conditions contained herein and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged by both Inventor and Company, Inventor and Company hereby agree as follows:**

1. **Inventor assigns to Company his entire right, title and interest as set forth in the attached Assignment (Exhibit C), which is incorporated into this agreement and made a part of this agreement.**
2. **Company grants Inventor a 50% interest in Company.**

3. Any agreement executed by **Inventor** prior to the effective date of this agreement relating to the sale of explosion-mitigating machinery is specifically excluded from this agreement and, in particular, the use of moneys received by **Inventor** under any such agreement executed by **Inventor** prior to the effective date of this agreement shall be strictly at **Inventor's** discretion.
4. **Remedies.** In the event of breach or threatened breach of an obligation under this agreement by **Inventor**, **Inventor** agrees that **Company** shall be entitled to specific performance or injunctive relief with respect to such breach without being required to prove irreparable harm to **Company**. In the event of breach or threatened breach of an obligation under this agreement by **Company**, **Company** agrees that **Inventor** shall be entitled to specific performance or injunctive relief with respect to such breach without being required to prove irreparable harm to **Inventor**. In the event of any disagreement between the parties with respect to this agreement, the parties shall attempt to resolve the disagreement among themselves and, failing such resolution, shall submit the disagreement to binding arbitration under the rules then in effect of the International Arbitration Association. The venue of such arbitration shall be Connecticut. **Inventor** and **Company** agree that any action or proceeding relating to or arising out of this agreement shall be adjudicated in the courts of the State of Connecticut or the United States District Court of the District of Connecticut to the extent that the same is not adjudicable by arbitration.
5. **Waiver.** The waiver of a breach or violation of any part of this agreement shall not operate as, or be construed to constitute, a waiver of any subsequent breach or violation

of the same or any other part of this agreement and shall not preclude the exercise of any right, power or privilege under this agreement.

6. **Governing Law.** This agreement shall be governed by, and construed in accordance with the law (but not the law governing conflicts of law) of the State of Connecticut, United States of America.
7. **Successors and Assigns.** This agreement shall be binding upon and shall inure to the benefit of the **Inventor and Company** and to their respective successors and heirs. This agreement shall be assignable by **Company** only with the prior written consent of **Inventor**, such consent not to be unreasonably withheld. This agreement shall be assignable by **Inventor** only with the prior written consent of **Company**, such consent not to be unreasonably withheld.
8. **Severability.** The invalidity or unenforceability of any part of this agreement shall not affect the validity or enforceability of any other part of this agreement, each of which shall remain in full force and effect.
9. **Headings.** The headings of this agreement are for convenience only and shall not limit or otherwise affect the meaning of this agreement.
10. **Amendments.** This agreement may be amended and any provision may be waived only in writing signed by all parties.
11. **Entire Agreement.** This agreement represents the entire undertaking and agreement of **Inventor and Company** and supercedes all prior communications, agreements, and understandings relating to its subject matter. Each party represents and warrants that it has the necessary powers, rights, and authority to enter into this agreement.


12. **Counterparts.** This agreement may be executed in multiple counterparts, each of which shall be deemed to be an original, but all of which together shall constitute one and the same instrument and facsimile signatures shall be given the same effect as original signatures.

13. **Execution.** Each party represents and warrants that the person executing this Agreement is fully authorized to execute this Agreement on its behalf.

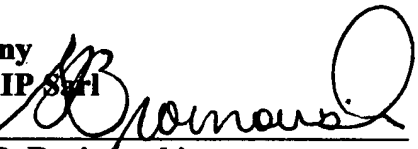
IN WITNESS WHEREOF, Inventor and Company have duly executed this agreement on the dates indicated.

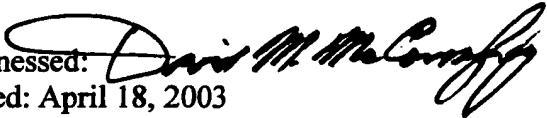
Dated: April 18, 2003

  
Inventor  
Eduardo Diaz Del Rio Perez

Witnessed:   
Dated: April 18, 2003

Dated: April 18, 2003

Company  
Fusaco IP Sdn Bhd  
By:   
Stefan P. Broinowski  
Its Managing Director

Witnessed:   
Dated: April 18, 2003

## EXHIBIT A

---

**Dated: April 18, 2003**

18, 2003  
y: David M. McCloskey

**Dated: April 18, 2003**





## EXHIBIT B

---

# Extrait complet

le 17.04.2003 à 17:32 [Etat au 16.04.2003]

Report du	Nature juridique	Date d'inscription	Numéro fédéral	Numéro de dossier
	Société à responsabilité limitée	09.04.2003	CH-550- 1033952-7	2003/03650

Réf.	Raison sociale	Réf.	Siège
1	Fusaco IP Sàrl	1	Lausanne

Réf.	Adresse	Réf.	Dates des statuts
1	Avenue de Gratta-Paille 2, c/o Développement économique canton de Vaud (DEV)	1	07.04.2003

Capital	Libéré	Prestation des associés
Réf. Nominal		
1	20'000 CHF	20'000 CHF

Inscr.	Rad.	But, observations
1		But: production, commerce de produits, recherche et développement, détention de licences et de brevets, notamment dans le domaine de la prévention des explosions d'hydrocarbures (Explosion Mitigation Technology).

Réf.	Organe de publication
1	Feuille officielle suisse du commerce

Journal		Publication FOSC		
Réf.	Numéro	Date	Date	Page
1	3650	09.04.2003	15.04.2003	13

3630/09.04.2003/15.04.2003						
Ref.			Associés, gérants, personnes ayant qualité pour signer			
Inscr.	Mod.	Rad.	Nom et prénom, origine, domicile	Fonctions, part	Mode signature	
1			Chauvet Nicolas, de Genève, à Collonge-Bellerive	associé gérant avec une part de CHF 19'000	signature collective à 2	
1			Hertz Denis, d'Icogne, à Genève	associé gérant avec une part de CHF 1'000	signature collective à 2	

le 17.04.2003 à 17:32 [Etat au 16.04.2003]

Les informations ci-dessus sont fournies sans garantie ; elles n'entraînent pas l'effet de publicité, attaché seulement à l'extrait certifié conforme établi par l'Office cantonal du registre du commerce et aux textes des publications parues dans la Feuille officielle suisse du commerce (FOSC).

# EXHIBIT C

---

**Assignment of Rights in Invention**  
**(Sole inventor; single assignee, without witness or notarization)**

Docket No.  
576391-2001

Inventor	Residence of Inventor
Eduardo Diaz Del Rio Perez	C/Caleruega No. 3 28033 Madrid Spain
Assignee	Residence or Principal Place of Business of Assignee
Fusaco IP Sarl	p.a. DEV 2, Avenue de Gratta-Paille Casa postale 452 1000 Lausanne 30 Switzerland

*Whereas, I, the above-identified Inventor, have invented certain new and useful improvements in:*  
**Explosion-Inhibiting Articles of Manufacture**

*(hereinafter referred to as "Invention") for which I am making application for Letters Patent in the United States of America;*

*And, whereas I desire to assign a 100% undivided interest in said Invention, said application disclosing the Invention and any Letters Patent which may be granted therefor to the above-identified Assignee, and whereas said Assignee is desirous of acquiring the entire right, title and interest in the same;*

Now, this indenture witnesseth, that for the sum of Ten dollars  
(\$ 10.00 ), and other good and valuable consideration, the receipt whereof is hereby acknowledged;

*I hereby assign, sell and transfer a 100% undivided interest in said invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee;*

*And I hereby authorize and request the Commissioner of Patents and Trademarks to issue said United States Letters Patent to said Assignee, as assignee of the whole right, title and interest thereto;*

*And I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;*

**Assignment of Rights in Invention**  
**(Sole inventor; single assignee; without witness or notarization)**

Docket No.  
576391-2001

Inventor

Residence of Inventor

Eduardo Diaz Del Rio Perez

C/Caleruega No. 3  
28033 Madrid  
Spain

Assignee

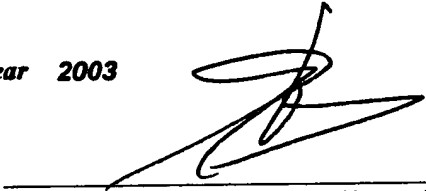
Residence or Principal Place of Business of Assignee

Fusaco IP Sarl

p.a. DEV  
2, Avenue de Gratta-Paille  
Casa postale 452  
1000 Lausanne 30  
Switzerland

*And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining any reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.*

Executed this 18th day of April, in the year 2003  
at New York, New York

  
(Signature of Inventor)  
Eduardo Diaz Del Rio Perez.

STEFAN BROINOWSKI

91-147  
211  
6440201847

122

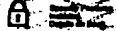
DATE 04/18/03

PAY TO THE  
ORDER OF

Eduardo Diaz del Rio Perez

\$ 10.00

Ten 

DOLLARS 

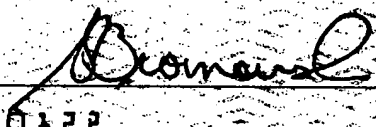


**PUTNAM TRUST**

a division of THE BANK OF NEW YORK  
187 Broadway, New York  
New York, NY 10038

MEMO

ASSIGNMENT FEE



⑆021101470⑆ ⑈6440201847⑈ 0122

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## **EXHIBIT 3**

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

U.S. Patent and Trademark Office (U.S. DEPARTMENT OF COMMERCE)

**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☒ Declaration  
Submitted  
with Initial  
Filing

OR

☐ Declaration  
Submitted after  
Initial  
Filing (surcharge  
(37 CFR 1.16(e)))

Attorney Docket Number

576391-2001

First Named Inventor

Eduardo Diaz Del Rio Perez

**COMPLETE IF KNOWN**

Application Number

/

Filing Date

Art Unit

Examiner Name

As a below named inventor, I hereby declare that:

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

**Explosion-Inhibiting Articles of Manufacture**

the specification of which

(Title of the Invention)

☒ is attached hereto  
OR

☐ was filed on (MM/DD/YYYY)

as United States Application Number or PCT International

Application Number

and was amended on (MM/DD/YYYY)

(if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above:

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365 (a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application	Foreign Filing Date	Priority	Certified Copy Attached?	
			YES	NO
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

Burden Hour Statement: This form is estimated to take 21 minutes to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



**DECLARATION — Utility or Design Patent Application**

Direct all correspondence to:

Customer Number  
or Bar Code Label

OR Correspondence address below

PATENT TRADEMARK OFFICE

Name David M. McConoughey

Address Stoll, Miskin &amp; Badie, 350 Fifth Ave Ste 4710

City New York

State NY

ZIP 10118-4710

Country US

Telephone 212.268.1530

Fax 212.268.1530

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR :

☐ A petition has been filed for this unsigned inventor

Given Name

(first and middle (if any)) Eduardo

Family Name

or Surname Diaz Del Rio Perez

Inventor's  
Signature

Date April 18, 2003

Residence: City Madrid

State -

Country Spain

Citizenship Spain

Mailing Address C/Calcruega No. 3

City 28033 Madrid

State

ZIP

Country Spain

NAME OF SECOND INVENTOR:

☐ A petition has been filed for this unsigned inventor

Given Name

(first and middle (if any))

Family Name

or Surname

Inventor's  
Signature

Date

Residence: City

State

Country

Citizenship

Mailing Address

City

State

ZIP

Country

☐ Additional inventors are being named on \_\_\_\_\_ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## **EXHIBIT 4**



UNITED STATES POSTAL SERVICE

GXG International Air Waybill

International delivery by FedEx Express

Sender's Name

1 From Please print and print back Date MM/DD/YY 09/29/2006

Sender's Name DAVID M. McConvery Phone 862.368.1883

Company % Stoll, Mission & Barre

Address 350 FIFTH AVE STE 4710

City New York State NY ZIP Code 10108-4710

Country US

2 To Recipient's Name EDUARDO DIAZ RIVERA Phone 011.34.91.766.6694

Company

Address Calle Caleruega No. 3

City MADRID

Country SPAIN

ZIP Code Postal Code 28033

Recipient's Tax ID Number for Customs Purposes (if applicable)

For tracking go to the USPS Web site at www.usps.com/shipping/trackandconfirm.htm or call 1.800.222.1811

Sender's Copy

Sender's Name

Company

Address

City

Country

ZIP Code

Recipient's Tax ID Number for Customs Purposes (if applicable)

For tracking go to the USPS Web site at www.usps.com/shipping/trackandconfirm.htm or call 1.800.222.1811

Sender's Copy

**STOLL, MISKIN & BADIE**  
ATTORNEYS AND COUNSELORS AT LAW  
THE EMPIRE STATE BUILDING  
SUITE 4710  
350 FIFTH AVENUE  
NEW YORK, NEW YORK 10118-4710

HOWARD C. MISKIN  
JAMES W. BADIE  
ROBERT S. STOLL  
GLORIA TSUI-YIP

PATENT TRADEMARK COPYRIGHT  
INTELLECTUAL PROPERTY  
UNFAIR COMPETITION

TELEPHONE: 212 268 1530  
FAX: 212 268 1593  
E-MAIL: dmccounou@ix.netcom.com

SAMUEL J. STOLL (1947-2001)  
DORIS S. HOFFMAN (1970-1997)

OF COUNSEL  
DAVID M. McCONOUGHEY  
JOHN P. McMAHON

Friday, September 29, 2006.

**By U.S. Postal Service Global Express Guaranteed: 8269795004**

Eduardo Diaz Del Rio Perez  
Calle Caleruega No. 3  
E-28033 Madrid  
Spain

**Re: FUSACO IP, Sarl**  
United States National Phase of International  
Patent Application No. PCT/IB04/001539  
Matter No. 576391-2003

Dear Eduardo:

The United States Patent and Trademark Office is requiring that a Declaration signed by you as inventor in the above-identified U.S. patent application be filed.

A Declaration for your execution is enclosed. (A copy of the International Application as published is enclosed.) Please sign and date the Declaration and FAX it to me at 212.268.1593 and send me the signed original by mail.

Under the Assignment executed by you on April 18, 2003, you have an obligation to sign such a Declaration. (A copy of the Assignment was previously provided to you as an enclosure with our letter of April 9, 2004 to you.)

The Assignment states

I [Eduardo Diaz Del Rio Perez] hereby assign, sell, and transfer a 100% undivided interest in said invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the

United States and countries foreign thereto, unto said Assignee  
[FUSACO IP, Sarl]

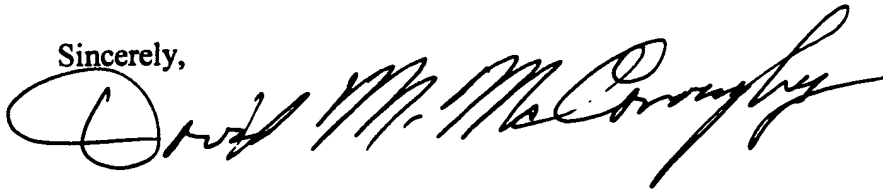
The Assignment further states

... I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;

And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.

I appreciate your cooperation and thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "David M. McCauley". The signature is written in a cursive style with a large, looping initial "D".

**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☐ Declaration  
Submitted  
With Initial  
Filing

OR

☒ Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)

Attorney Docket  
Number

576391-2003

First Named Inventor

DIAZ DEL RIO PEREZ, Eduardo

**COMPLETE IF KNOWN**

Application Number

10/553,663

Filing Date

04/16/2004

Art Unit

N. A.

Examiner Name

N. A.

I hereby declare that:

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Explosion-inhibiting Articles of Manufacture

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☒ was filed on (MM/DD/YYYY) 04/16/2004 as United States Application Number or PCT International

Application Number PCT/IB04/001539 and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
PCT/IB04/001539	IB	04/16/2004	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**DECLARATION — Utility or Design Patent Application**Direct all  
correspondence to:☐The address  
associated with  
Customer Number.

OR

☒Correspondence  
address below

Name

David M. McConoughey, Esq.

Address

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City

New York

State

NY

ZIP

10118-4710

Country

US

Telephone

212.268.1530

Email

dmcconou@bx.netcom.com

**WARNING:**

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**NAME OF SOLE OR FIRST INVENTOR:**☐

A petition has been filed for this unsigned inventor

Given Name (first and middle [if any])

Eduardo

Family Name or Surname

Diaz Del Rio Perez

Inventor's Signature

Date

October \_\_, 2006

Residence: City

Madrid

State

Country

Spain

Citizenship

Spain

Mailing Address

Calle Caleruega No. 3

City

Madrid

State

Zip

E-28033

Country

Spain

☐

Additional inventors or a legal representative are being named on the

supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
28 October 2004 (28.10.2004)

PCT

(10) International Publication Number  
WO 2004/091728 A1

(51) International Patent Classification<sup>7</sup>: A62C 3/06

(21) International Application Number:  
PCT/IB2004/001539

(22) International Filing Date: 16 April 2004 (16.04.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/463,763 18 April 2003 (18.04.2003) US

(71) Applicant (for all designated States except US): FUSACO  
IP, SARL [CH/CH]; p. a. Dev, 2, Avenue de Gratta-Paille,  
Casa Postale 452, CH-1000 Lausanne 30 (CH).

(72) Inventor; and

(75) Inventor/Applicant (for US only): DIAZ DEL RIO  
PEREZ, Eduardo [ES/ES]; C/Caleruega No. 3, E-28033  
Madrid (ES).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,  
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ZW.

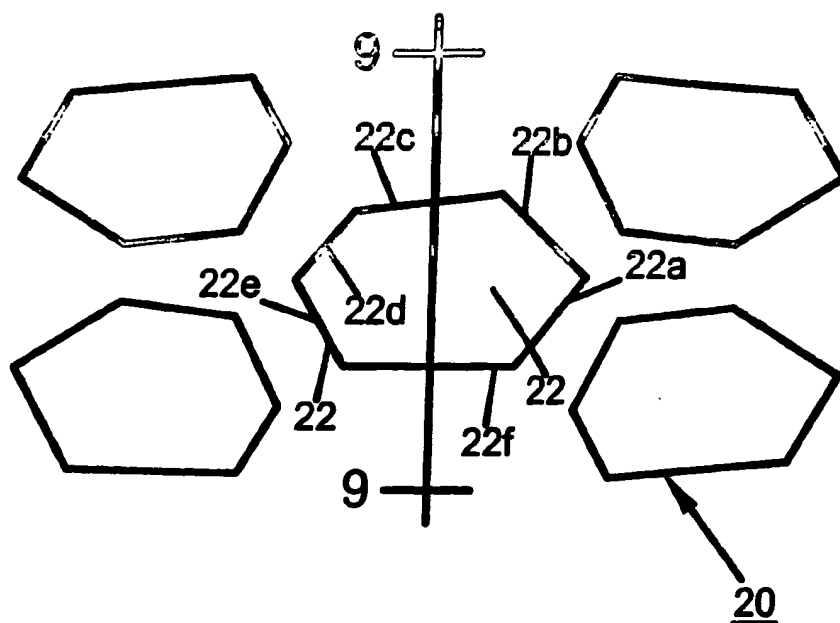
(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-  
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,  
GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK,  
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,  
ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted  
a patent (Rule 4.17(ii)) for the following designations AE,  
AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ,  
CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE,  
EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS,  
JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA,

[Continued on next page]

(54) Title: EXPLOSION-INHIBITING ARTICLES OF MANUFACTURE



(57) Abstract: Articles of manufacture formed of an apertured sheet material, the sheet material being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture, and having physical characteristics comprising: i) a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, ii) a heat conductivity of at least about 0.025 Cal/cm-sec. Preferably, the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at least one adjacent aperture. Further, the article preferably has a compressive yield of not more than about 10 percent.





MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patents (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patents (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patents (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patents (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA,

ZM, ZW, ARIPO patents (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patents (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patents (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patents (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- of inventorship (Rule 4.17(iv)) for US only

#### Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

**TITLE OF THE INVENTION**

**Explosion-inhibiting Articles of Manufacture.**

**CROSS-REFERENCES TO RELATED APPLICATIONS**

The benefit of U.S. Patent Application Serial No. 60/463763, filed 18 April 2003, is  
5 claimed. This application is a continuation of U.S. Patent Application Serial No. 60/463763, filed  
18 April 2003.

**STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT**

Not applicable.

**FIELD OF THE INVENTION**

10 The present invention relates to articles of manufacture for inhibiting the explosion of  
flammable fluids contained in closed containment vessels and, in particular, for inhibiting boiling  
liquid, expanding vapor explosions.

**BACKGROUND OF THE INVENTION**

15 Previous approaches to inhibiting the explosion of flammable liquid vapors, especially to  
inhibiting boiling liquid expanding vapor explosions, have failed to take into account the  
settlement and the compaction of explosion mitigation devices during the service of those devices.

**SUMMARY OF THE INVENTION**

The present invention comprises an article of manufacture comprising an apertured sheet  
material, the sheet material being provided with at least one row of a plurality of polygonal  
20 apertures, at least one of said polygonal apertures being irregular with respect to at least one  
adjacent polygonal aperture, and having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact  
surface of flammable fluids contained in a containing vessel,

ii. a heat conductivity of at least about 0.025 Cal/cm-sec.

25 Preferably, the inner peripheral length of at least one of the apertures is unequal to the inner  
peripheral length of at least one adjacent aperture. Further, the article preferably has a  
compressive yield of not more than about 10 percent.

In another embodiment, the foregoing sheet material is in the form of a cylindrical roll or  
bale

In a further embodiment, the foregoing sheet material is in the form of a spheroid

### BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a top plan view of a sheet material for use in the present invention.

Figure 2 is a side elevation view taken in transverse section along lines 2-2 in Figure 1 of a  
5 sheet material for use in the present invention.

Figure 3 is a top plan view of an apertured sheet material for use in the present invention.

Figure 4 is a side elevation view taken in transverse section along lines 4-4 in Figure 3 of  
an apertured sheet material for use in the present invention.

Figure 5 is a side elevation view taken in longitudinal section along lines 5-5 in Figure 3  
10 of an apertured sheet material for use in the present invention.

Figure 6 is a top plan view of an expanded, apertured sheet material for use in the present  
invention.

Figure 7 is a side elevation view taken in transverse section along lines 7-7 in Figure 6 of  
an expanded, apertured sheet material for use in the present invention.

Figure 8 is a top plan view on an enlarged scale of portion of Figure 7 of an expanded,  
15 apertured sheet material for use in the present invention.

Figure 9 is a side elevation view taken in transverse section along lines 9-9 in Figure 8 of  
an expanded, apertured sheet material for use in the present invention.

Figure 10 is a top plan view of a waved, expanded, apertured sheet material for use in the  
20 present invention.

Figure 11 is a side elevation view taken in transverse section along lines 11-11 in Figure  
10 of a waved, expanded, apertured sheet material for use in the present invention.

Figure 12 is a side elevation view taken in longitudinal section along lines 12-12 in Figure  
10 of a waved, expanded, apertured sheet material for use in the present invention.

Figure 13 is a front perspective view of a cylindrical shape made in accordance with the  
25 present invention.

Figure 14 is a front elevation view of a cylindrical shape made in accordance with the  
present invention.

Figure 15 is a top plan view taken in horizontal section along lines 15-15 in Figure 14 of a  
30 cylindrical shape made in accordance with the present invention.

Figure 16 is a side elevation view of a spheroidal shape made in accordance with the  
present invention.

### DESCRIPTION OF THE PREFERRED EMBODIMENTS

The present invention comprises, as an article of manufacture, an apertured sheet material, the sheet material being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture, and having physical characteristics comprising

- i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel,
- ii. a heat conductivity of at least about 0.025 Cal/cm-sec.

Preferably, the inner peripheral length of at least one of the apertures is unequal to the inner peripheral length of at least one adjacent aperture. Further, the article preferably has a compressive yield of not more than about 10 percent.

In this way, an apertured sheet material is provided that produces a configuration that is resistant to settling and to compaction. Such an article of manufacture is helpful in inhibiting a flammable fluid explosion in a closed containment vessel containing flammable fluid, particularly in inhibiting a boiling liquid, expanding vapor explosion (or "BLEVE".)

A sheet material for use in the present invention, and as illustrated in Figs. 1 & 2 by way of example, comprises a sheet 1 of heat-conductive material, preferably having the aforesaid physical properties. The sheet has a flat, generally planar configuration with a thickness from about 0.01 mm (1 micron) to about 0.1 mm (10 microns), desirably from about 0.03 mm (3 microns) to about 0.07 mm (7 microns) and preferably from about 0.04 mm (4 microns) to about 0.05 mm (5 microns).

The sheet material desirably has good heat conductivity in order to adequately dissipate heat in inhibiting the explosion of flammable fluids contained in closed containers, particularly for inhibiting BLEVEs. The heat conductivity should be at least about 0.025 Cal/cm-sec, particularly for materials with a specific density of from about 2.8 g/cm<sup>3</sup> to about 19.5 g/cm<sup>3</sup>, and preferably from about 0.025 to about 0.95 Cal/cm-sec, particularly for materials with a specific density of from about 2.8 g/cm<sup>3</sup> to about 19.5 g/cm<sup>3</sup>

The heat conductivity is nominally about 2.36 Watt/cm-deg (Kelvin) at 273 T.K. (degrees Kelvin) (for Aluminum)-The following can be used as candidate alloy or raw materials depending on the application:

Silver 4.28 Watt/cm-deg (Kelvin) at 273 T.K.,

Gold 3.2018 Watt/cm-deg (Kelvin) at 273 T.K.,

Copper 4.1 Watt/cm-deg (Kelvin) at 273 T.K.,

Stainless Steel 0.835 Watt/cm-deg (Kelvin) at 273 T.K., and

polymeric material

for a material with a density, for example, of 2.7 g/cm<sup>3</sup> (Al); 10.5 g/cm<sup>3</sup> (Silver), 19.3 g/cm<sup>3</sup> (Gold), 8.92 g/cm<sup>3</sup> (Copper), 7.86 g/cm<sup>3</sup> (Stainless Steel) or 0.9 to 1.5 g/cm<sup>3</sup> (polymeric material).

The sheet material is desirably relatively chemically inert to the contents of the closed container for the service life of the container and/or the residence period of the contents in the container. Materials may be metals and metallic alloys, such as aluminum, magnesium, copper, gold, silver or stainless steel, or nonmetallics, such as polymeric or plastic materials.

A slit sheet material for use in the present invention, and as is illustrated in Figs. 3, 4 & 5 by way of example, comprises a sheet material 10 having a plurality of parallel lines P (Fig. 3) of elongated rectangular apertures 12, preferably slots. Each rectangular aperture 12, and each line P of rectangular apertures 12, extends parallel to the longitudinal central axis of the sheet. Each rectangular aperture 12 in a line P of rectangular apertures 12 is spaced from the rectangular aperture 12 preceding it and the rectangular aperture 12 following it by an intermediate web 14 of solid, imperforate sheet material. In other words, in proceeding longitudinally along a line P of rectangular apertures 12, there is a rectangular aperture 12 followed by an intermediate web 14, followed by a rectangular aperture 12 followed by an intermediate web 14, et cetera.

In forming a sheet with polygonal apertures, the intermediate webs 14 of adjacent lines of rectangular apertures are offset with respect to each other so that in proceeding transversely across the sheet along a line T that is perpendicular to the longitudinal central axis of the sheet and that passes through an intermediate web 14 of an adjacent longitudinal line P of rectangular apertures 12,

- a. the transverse line T will pass across a rectangular aperture 12 of the next adjacent longitudinal line P of rectangular apertures 12,
- b. then through an intermediate web 14 of the next adjacent longitudinal line P of rectangular apertures 12,
- c. then across a rectangular aperture 12 of the next adjacent longitudinal line of rectangular apertures, et cetera.

In this way, the longitudinally extending rectangular apertures 12 alternate with intermediate webs 14 transversely across the sheet 10.

Preferably, the length of each longitudinally extending rectangular aperture 12 in proceeding along a transverse line T of rectangular apertures 12 should be different from the length of the rectangular aperture 12 preceding it and the length of the rectangular aperture 12 following it. In other words, the length of each longitudinally extending rectangular aperture 12 is preferably different from the length of the next adjacent longitudinally extending rectangular

aperture 12 in a transverse line T across the width of the sheet. Further, with respect to each rectangular aperture 12, the length of each of the four most adjacent rectangular apertures 12 in the two most adjacent longitudinal lines P of rectangular apertures 12 should preferably also be different from that of the rectangular aperture 12.

5 The lengths of the respective longitudinally extending rectangular apertures 12 in a transverse line T across the width of the sheet may be random with respect to each other. Alternatively, the lengths of each respective longitudinally extending rectangular aperture 12 may increase progressively in length in a transverse line T across the width of the sheet or decrease in length. In one alternative embodiment, the lengths of each respective longitudinally extending  
10 rectangular aperture 12 increase progressively in length in a transverse line T across the width of the sheet and the lengths of each respective longitudinally extending rectangular aperture 12 in the next adjacent transverse line T decreases progressively in length across the width of the sheet.

The length of the apertures 12 is nominally from about 10 to about 15 mm., desirably from about 12 mm. to about 15 mm., and preferably, from about 13 mm. to about 15 mm. In this way,  
15 an aperture of 10 mm. might be followed by one of 10.033 mm, followed by one of 10.06 mm. The width of each rectangular aperture, or slot, may be from about .02 mm. to .06 mm, desirably from about .03 mm. to about .05 mm., and, preferably, from about .04 mm. to about .05 mm. The spacing between the rows of apertures may be varied based on the properties of the material used for the sheet.

20 The intermediate web between apertures, in turn, is from about 2.5 mm to about 4.5 mm. In this way, an intermediate web of 3 mm. might be followed by one of 3.5 mm, followed by one of 4 mm.

In this way, irregularity is induced in the expanded apertured sheet that produces configurational resistance to settling and compaction.

25 A slit sheet material for use in the present invention, and as illustrated in Figs. 6 through 9 by way of example, is converted into an expanded, apertured (or fenestrated) sheet material 20 of the present invention that is provided with a plurality of many-sided, or polygonal apertures 22, such as, for example and as illustrated, hexagonal apertures. At least one polygonal aperture is irregular with respect to at least one adjacent polygonal aperture.

30 For example, the sum of the lengths of the inner edges of the sides of a polygonal aperture 22, for example lengths 22a, 22b, 22c, 22d, 22e, and 22f in Fig. 9, determine an inner peripheral length of a polygonal aperture 22. The inner peripheral length of each polygonal aperture 22 in proceeding along a transverse line T of polygonal apertures 22 should be different from the inner peripheral length of the polygonal aperture 22 preceding it and the inner peripheral length of the

polygonal aperture 22 following it. In other words, the inner peripheral length of each polygonal aperture 22 is different from the inner peripheral length of the next adjacent polygonal aperture 22 in a transverse line across the width of the sheet. Further with respect to each polygonal aperture 22, the inner peripheral length of each of the four most adjacent polygonal apertures 22 in the two most adjacent longitudinal lines of polygonal apertures 22 should preferably also be different from that polygonal aperture 22.

The inner peripheral lengths of the respective polygonal apertures 22 in a transverse line T across the width of the sheet may be random with respect to each other. Alternatively, the inner peripheral lengths of each respective polygonal aperture 22 may increase progressively in inner peripheral length in a transverse line T across the width of the sheet or decrease. In one alternative embodiment, the inner peripheral lengths of each respective polygonal aperture 22 increase progressively in length in a transverse line T across the width of the sheet and the inner peripheral lengths of each respective polygonal aperture 22 in the next adjacent transverse line T decrease progressively in length across the width of the sheet.

The term "irregular" as it is used herein in the context of the inner peripheral length of at least one of said apertures being unequal to the inner peripheral length of at least one adjacent aperture means that the numerical value of the inequality of one inner peripheral length with respect to the other inner peripheral length is greater than the variation in inner peripheral length produce by manufacturing variation or manufacturing tolerance. In other words, the inequality is intentional rather than random or inherent manufacturing variation.

While the irregularity of at least one polygonal aperture with respect to at least one adjacent polygonal aperture has been described in terms of the inner peripheral length of at least one of said apertures being unequal to the inner peripheral length of at least one adjacent aperture, it should be understood that irregularity can also be produced in other ways, such as having a different number of sides on the polygon (such as a pentagon or a heptagon versus a hexagon) or the length of a side of a polygonal aperture being different from the corresponding side of an adjacent polygonal aperture (i.e., greater than manufacturing variation or tolerance as previously stated) or the angle between two adjacent sides of a polygonal aperture being different from the corresponding angle between the corresponding two sides of an adjacent polygonal aperture. For example, the respective lengths of the side edges of the apertures may not all be equal, i.e., at least one side may not be the same length as any of the other sides, thereby providing an aperture with a configuration such as an irregular polygon.)

In this way, when multiple expanded, apertured sheets are placed on top of each other, they are unable to align polygonal apertures and nest into each other, settling and thereby reducing the effective thickness of the multiple sheets 20.

The expanded, apertured (or fenestrated) sheet material 20 of the present invention

5 desirably has a compression yield, or resistance to compaction (i.e., permanent deformation under compressive load), of not more than 10 percent. Ideally, however, there is essentially no compressive yield in service.

10 The expanded, apertured sheet material 20 is formed by tensioning slotted sheet material 10 over large wheel of a varying diameter positioned in such a way as to regulate the spreading of the sheet material to an additional width 50% to 100 % that of the raw sheet material width so as to ensure the resulting openings form a plurality of polygonal apertures 22 as aforesaid.

The expanded, apertured sheet material 20 desirably has an effective surface area per unit volume from at least about 2,000 times the contact surface of flammable liquid/ vapors and gases contained in closed containers, particularly for inhibiting boiling liquid, expanding vapor  
15 explosions, and preferably from at least about 3,000 times the contact surface of flammable liquid/ vapors and gases contained in closed containers. The term "contact surface" refers to the surface area of the containment vessel that is in contact with the gaseous, aerosol or vapor phase of the flammable fluid that is contained in the containment vessel. Normally the flammable fluids (liquid, vapor, aerosol or gas ) are in contact with the surface areas of the walls of the container  
20 containing the flammable fluid. The insertion of the finished expanded, apertured sheet material increases the surface area of contact with the flammable fluid by at least about 2,000 times this contact surface area, preferably at least about 3,000 times this contact surface area. This ratio is significant and to compromise this proportion of contact relative to the specific fluid in question is to risk a BLEVE. This area varies in relation to the heat conductivity and compressive yield  
25 strength of the material used.

In one embodiment, expanded, apertured sheet material 20 for use in the present invention, and as is illustrated in Fig. 16 by way of example, may be formed into a shape that comprises a body 100 with a generally spheroidal external configuration or shape.

30 The internal configuration of the generally spheroidal body 100 comprises at least one strip of the aforesaid expanded, expanded sheet material that is folded and/or crimped and cupped to form said spheroidal shape. The generally spheroidal shape may be formed using a section of expanded, apertured sheet material of a size proportional to about 20% of the width of the expanded, apertured sheet material.



The outer spherical periphery of the spheroid 100 encloses a volume. The surface area of the material contained within this periphery, i.e., inside the spheroid, subject to the application design requirement, is at least about 1.5 square centimeters per cubic centimeter of said volume or larger as required. The surface area of the material should be at least about 2,000 times the contact surface of flammable fluid contained in the enclosing container of those flammable fluid, particularly for inhibiting BLEVEs.

The spheroid 100 desirably has a compression yield, or resistance to compaction (i.e., permanent deformation under compressive load), of not more than 10 percent. Ideally, however, there is essentially no compressive yield in service.

The structural strength of the final product can also be modified by using a different heat hardness in the sheet material.

In an alternative embodiment of the present invention, expanded, apertured sheet material for use in the present invention, and as illustrated in Figs. 10 through 12 by way of example, is provided with a transverse undulating, or sinusoidal, wave 42 formed in it and the waved, expanded, apertured sheet material 40, as illustrated in Figs. 13 through 15 by way of example, is helically wound into a cylindrical shape 200, such as a cylindrical bale. The cylindrical shape 200 is generally circular in transverse section (Fig. 14) and generally rectangular in longitudinal section (Fig. 15.) In a further form of this cylindrical embodiment, a flat expanded, apertured sheet material may be wound into the cylindrical form. In a still further form (Figs. 13-15) of this cylindrical embodiment, a sheet of flat expanded, apertured sheet material 202 and a sheet of waved, expanded, apertured sheet material 204 may be wound into the cylindrical form, thereby forming alternate layers of flat and waved expanded, apertured sheet material in the cylindrical shape.

Because of the wave 42 formed in the sheet material 40, with the sheet material 40 helically wound, the wave 42 causes an increase in the effective diameter of the cylinder 200. In this way, the effective surface area contained within a given outer periphery of the cylinder 200 is increased. This provides large included volume cylinders 200 with low mass and high internal effective area.

The cylinder 200 desirably has a compression yield, or resistance to compaction (i.e., permanent deformation under compressive load), of not more than 10 percent. Ideally, however, there is essentially no compressive yield in service.

The imperforate starting sheet material 1 may be supplied as a continuous, non-perforated web of sheet material. Then, rectangular apertures 12, or slots, are formed in the continuous web in the aforesaid configuration, such as by slitting. Then, the slotted web 10 may be expanded

transversely by tensioning the sheet material 10 transversely, such as over a wheel positioned in such a way as to regulate the spreading of the sheet material to an additional width 50% to 100 % that of the raw sheet material width so as to ensure the resulting openings form a plurality of polygonal apertures 22 of irregularity as aforesaid. Adjusting the position and tension of the expanding wheel on the production machine does this. By doing this, the result is the ability to have the walls of the finished honeycomb pattern more or less more erect, thereby increasing the compressive strength of the finished expanded, apertured sheet material 20.

Optionally, the expanded, apertured web 20 may have a sinusoidal transverse wave 42 formed in it. The form of the wave 42 is introduced or impressed into the lengths of the sheet material 20 as a series of transverse kinks or waves 42 along the length of the web that looks like waves when the finished product is spooled.

Cylindrical shapes 200 may be formed by winding the aforesaid expanded, apertured sheet material.

Spheroid shapes 100 may be made by feeding the sheet material 20 provided with a plurality of rows of a plurality of parallel apertures 22, the longitudinal central of each being parallel to the longitudinal central axis of the sheet, into a machine using a mechanical device comprising two semi-circular rimmed sections with the working sections opposing each other. One is a stationary semi circular die of a variable radius with a concave working edge. The other is a rotating 360 degree circular die with a concave working edge with a friction surface. The rotation of the circular die against the fixed die forms the sheet material into a tube shape. As the sheet material is drawn through the aperture formed by the interfacing of the circular die rotating against the fixed die, the rotating die grabs a length of sheet material, determined by the material volume required for the diameters of the two semi-circular rimmed sections of the dies. and tumbles the expanded sheet material into a generally spheroidal shape.

The expanded, apertured sheet material of the present invention may be used in the following applications:

1. Cylinders of expanded, apertured sheet material (netting) loaded into large closed vessels, tanks, cans, drums, bulk carriers, fuel tanks of all description, pipe lines, piping, tubing, construction, insulation and in other applications where flammable fluids, such as, flammable liquids, vapors, aerosols or gases are used, stored, or transported;
2. Spheroids of expanded, apertured sheet material loaded as spheroids into small closed vessels, gas cylinders, gas bottles, fuel tanks of all description, bulk carriers, construction, insulation and in other applications where flammable fluids, such as flammable liquids, vapors, aerosols or gases are, used, stored or transported;

3. Solar panels; 4. Insulation; 5. Construction material; 6. Sound proofing; 7. Cooling elements for computer equipment; 8. Filters; 9. Heat Exchangers; 10. Fire-proof cloth; 11. Fire-retardants; 12. Aircraft; 13. Refineries; 14. Pipelines; 15. Gasoline stations; 16. Gas tanks and gas cylinders; 17. Gas vehicles; and 18. Bulk fluid carriers and vessels.

**CLAIMS**

**What is claimed is:**

1. An explosion-inhibiting article of manufacture comprising an apertured sheet material, said sheet material
  - 5 a. being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture,  
and
  - b. having physical characteristics comprising
    - 10 i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and
    - ii. a heat conductivity of at least about 0.025 Cal/cm-sec.
2. An explosion-inhibiting article of manufacture in accordance with claim 1, wherein the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at  
15 least one adjacent aperture.
3. An explosion-inhibiting article of manufacture in accordance with claim 1, wherein the material has a density from about  $2.8 \text{ g/cm}^3$  to about  $19.5 \text{ g/cm}^3$ .
4. An explosion-inhibiting article of manufacture in accordance with claim 1, wherein said article has a compressive yield of not more than about 10 percent.
- 20 5. An explosion-inhibiting article of manufacture having a generally spheroidal shape and comprising an apertured sheet material, said sheet material
  - a. being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture,  
25 and
  - b. having physical characteristics comprising
    - i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and
    - ii. a heat conductivity of at least about 0.025 Cal/cm-sec.
- 30 6. An explosion-inhibiting article of manufacture in accordance with claim 5, wherein the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at least one adjacent aperture.

7. An explosion-inhibiting article of manufacture in accordance with claim 5, wherein the material has a density from about  $2.8 \text{ g/cm}^3$  to about  $19.5 \text{ g/cm}^3$ .

8. An explosion-inhibiting article of manufacture in accordance with claim 5, wherein said article has a compressive yield of not more than about 10 percent.

5 9. An explosion-inhibiting article of manufacture having a generally cylindrical shape and comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures, at least one of said polygonal apertures being irregular with respect to at least one adjacent polygonal aperture,

10 and

b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about  $0.025 \text{ Cal/cm-sec}$ .

15 10. An explosion-inhibiting article of manufacture in accordance with claim 9, wherein the inner peripheral length of at least one of said apertures is unequal to the inner peripheral length of at least one adjacent aperture.

11. An explosion-inhibiting article of manufacture in accordance with claim 9, wherein the material has a density from about  $2.8 \text{ g/cm}^3$  to about  $19.5 \text{ g/cm}^3$ .

20 12. An explosion-inhibiting article of manufacture in accordance with claim 9, wherein said article has a compressive yield of not more than about 10 percent.

13. An explosion-inhibiting article of manufacture comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures,

25 and

b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about  $0.025 \text{ Cal/cm-sec}$ ,

30 said article having a compressive yield of not more than about 10 percent.

14. An explosion-inhibiting article of manufacture having a generally spheroidal shape and comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures,

and

b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about 0.025 Cal/cm-sec,

5 said article having a compressive yield of not more than about 10 percent.

15. An explosion-inhibiting article of manufacture having a generally cylindrical shape and comprising an apertured sheet material, said sheet material

a. being provided with at least one row of a plurality of polygonal apertures,

and

10 b. having physical characteristics comprising

i. a surface area per unit volume of application of at least about 2,000 times the contact surface of flammable fluids contained in a containing vessel, and

ii. a heat conductivity of at least about 0.025 Cal/cm-sec,

said article having a compressive yield of not more than about 10 percent.

15

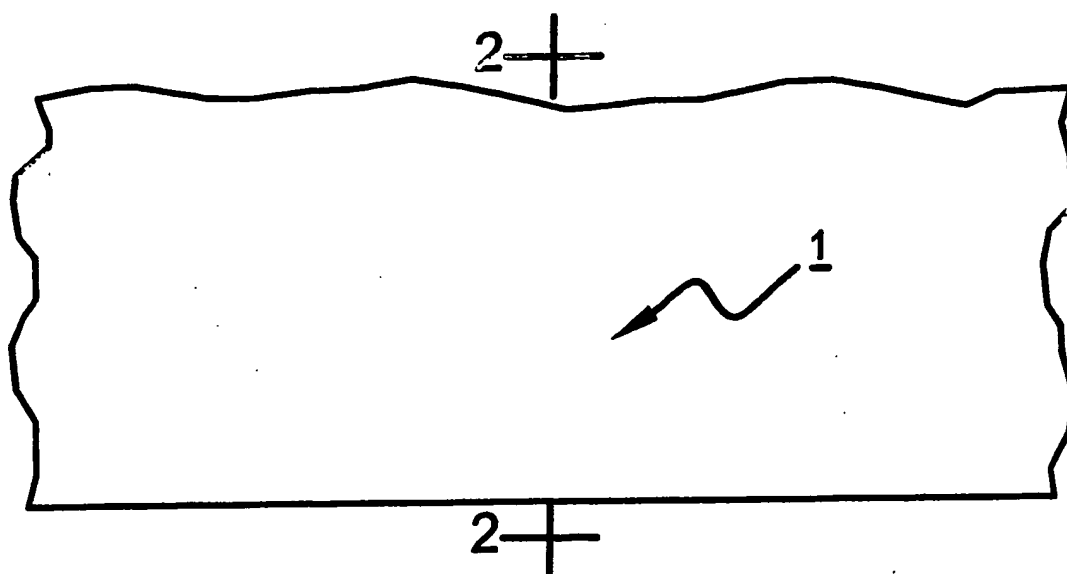


FIG. 1

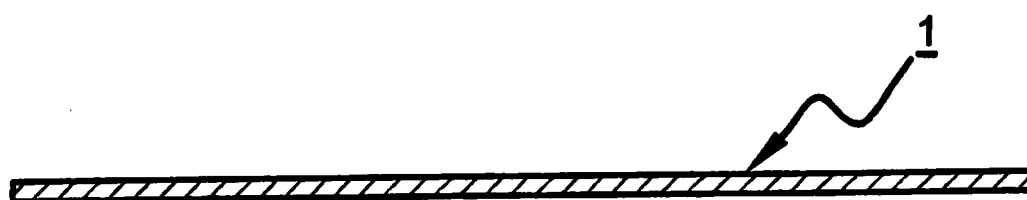
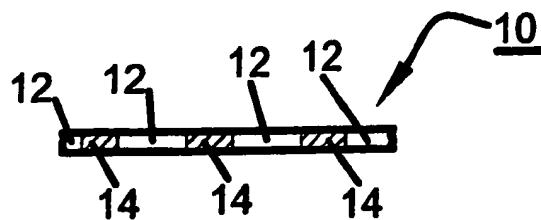
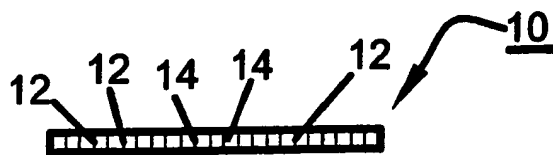
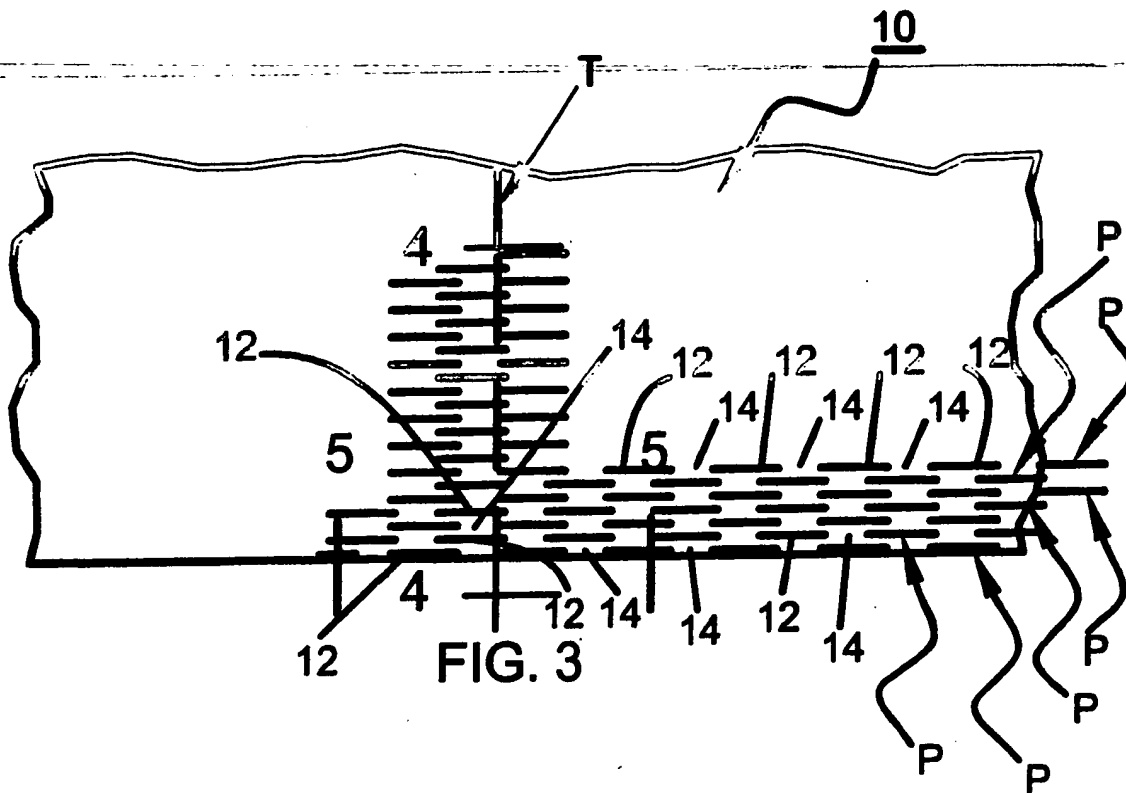


FIG. 2





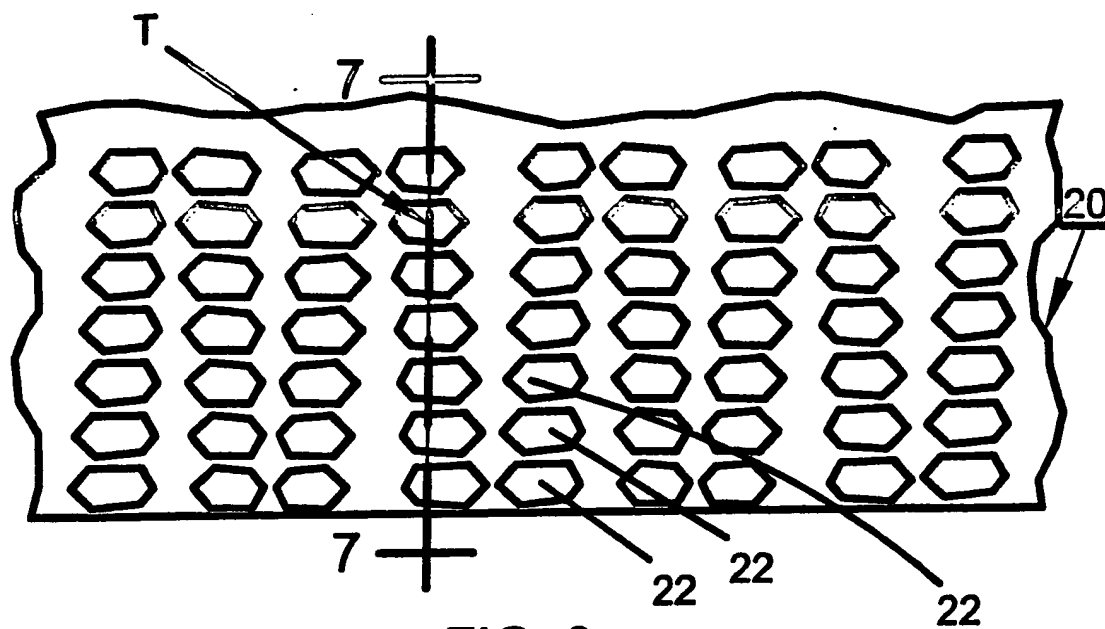


FIG. 6

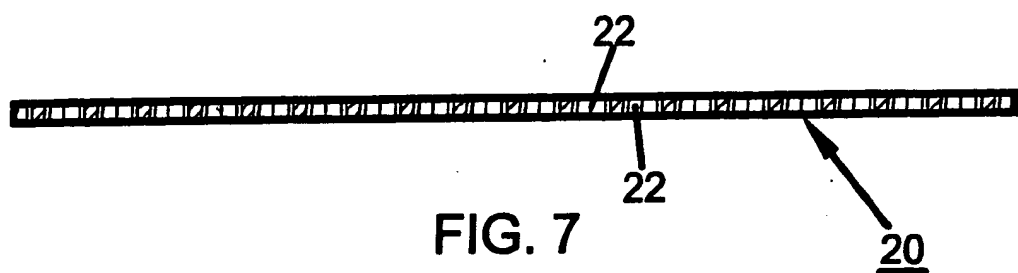
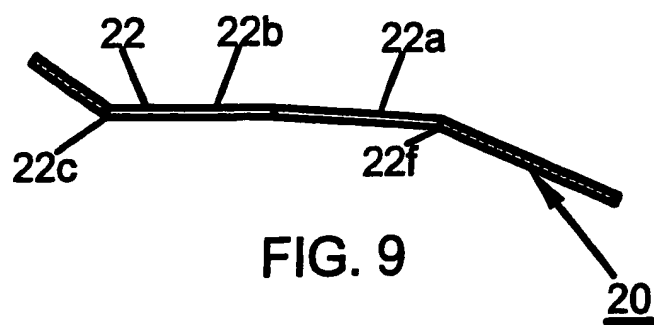
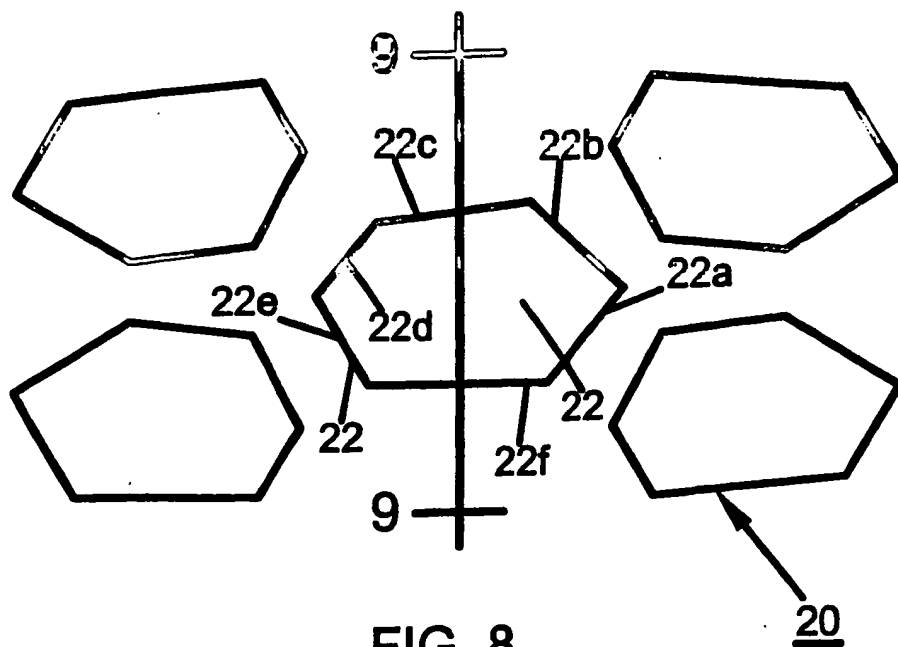
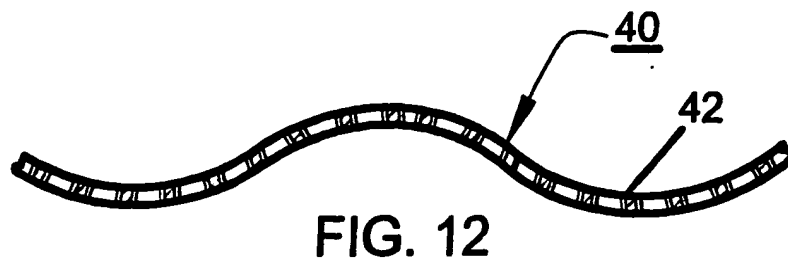
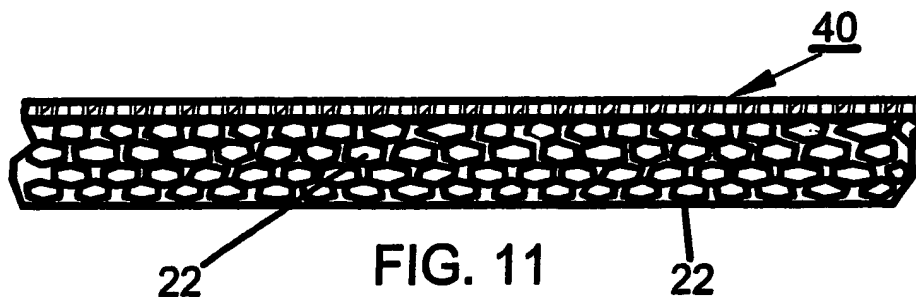
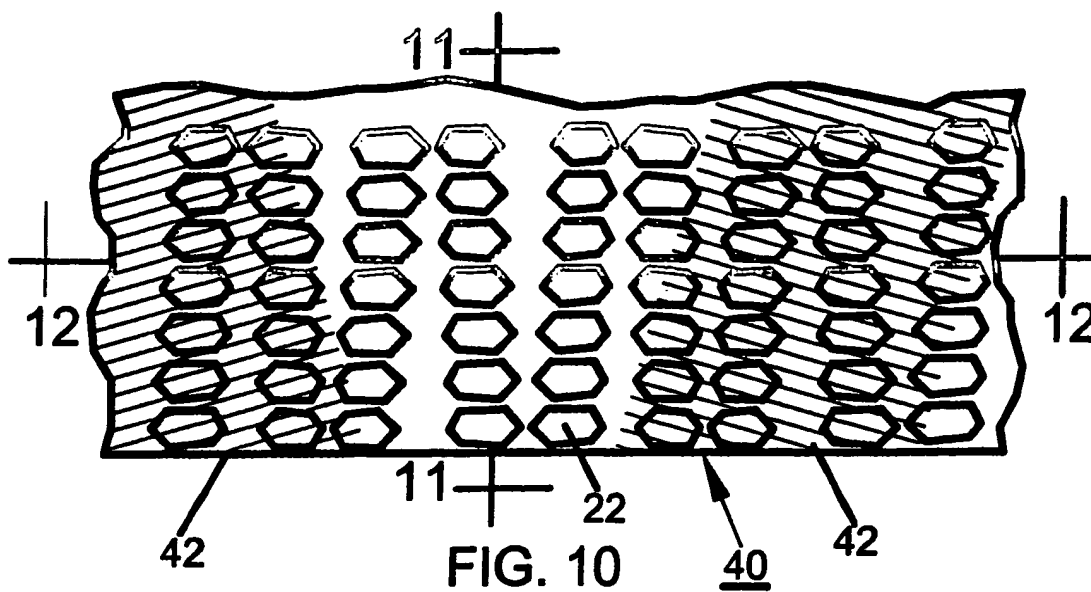


FIG. 7





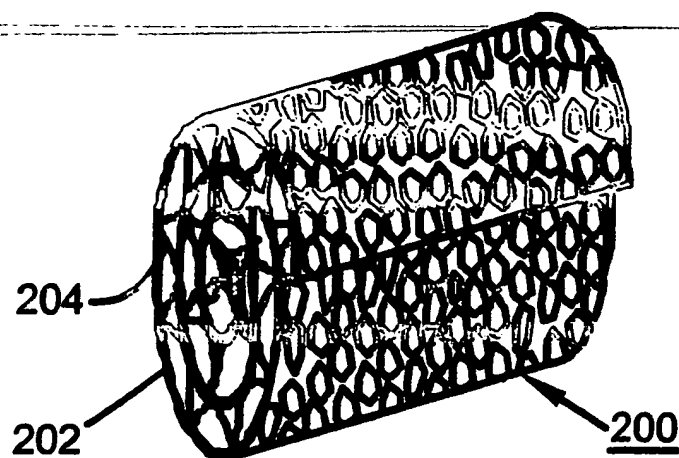


FIG. 13

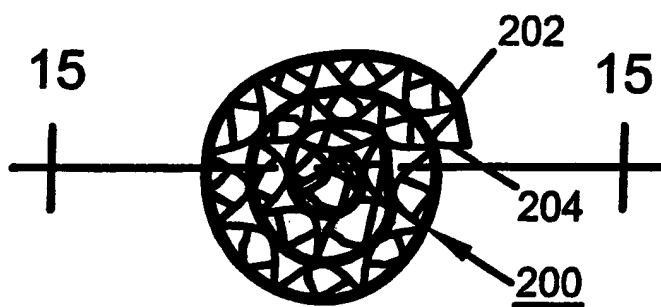


FIG. 14



FIG. 15

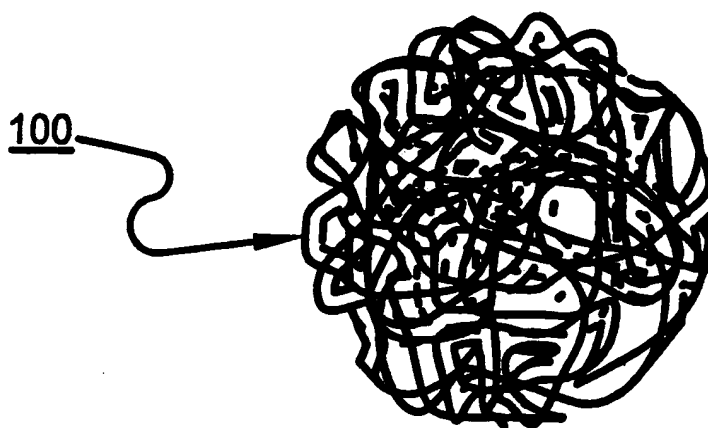


FIG. 16

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## EXHIBIT 5

From: "U.S. Postal Service\_" <U.S. Postal\_Service@usps.com>  
To: dmccconou@ix.netcom.com  
Subject: USPS Shipment Info for 8269 7950 04  
Date: Oct 2, 2006 7:10 PM

This is a post-only message. Please do not respond.

David McConoughey has requested that you receive a Track & Confirm update, as shown below.

Track & Confirm e-mail update information provided by the U.S. Postal Service.

Label Number: 8269 7950 04

Service Type: Global Express Guaranteed

Shipment Activity	Location	Date & Time
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Enroute	NEW YORK NY 10199	09/29/06 6:14pm
Acceptance	NEW YORK NY 10001	09/29/06 2:06pm

Reminder: Track & Confirm by email

Date of email request: 09/30/06

Future activity will continue to be emailed for up to 2 weeks from the Date of Request shown above. If you need to initiate the Track & Confirm by email process again at the end of the 2 weeks, please do so at the USPS Track & Confirm web site at <http://www.usps.com/shipping/trackandconfirm.htm>

USPS has not verified the validity of any email addresses submitted via its online Track & Confirm tool.

For more information, or if you have additional questions on Track & Confirm services and features, please visit the Frequently Asked Questions (FAQs) section of our Track & Confirm site at <http://www.usps.com/shipping/trackandconfirmfaq.htm>

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DAVID M. MCCONOUGH, Esq.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## EXHIBIT 6

From: "David M. McConoughey, Esq." <dmccconou@ix.netcom.com>  
To: "\"Eduardo Diaz Del Rio Perez\""  
Subject: U.S. Patent Application Corresponding to International Patent Application No. PCT/IB04/01539 (filed 04/16/2004)  
Date: Sep 25, 2006 4:06 PM

Attachments: winmail.dat

Dear Eduardo:

The United States Patent and Trademark Office is requiring that a Declaration signed by you as inventor in the above-identified U.S. patent application be filed. (A copy of the type of form to be signed is attached.)

Under the Assignment executed by you on April 18, 2003, you have an obligation to sign such a Declaration. (A copy of the Assignment was previously provided to you as an enclosure with our letter of April 9, 2004 to you.)

The Assignment states

I [Eduardo Diaz Del Rio Perez] hereby assign, sell, and transfer a 100% undivided interest in said invention, said application, including any divisions, continuations, and continuations-in-part thereof, and in and to any and all Letters Patent of the United States, and countries foreign thereto, which may be granted for said Invention, and in and to any and all priority rights, Convention rights, and other benefits accruing or to accrue to me with respect to the filing of applications for patents or securing of patents in the United States and countries foreign thereto, unto said Assignee [FUSACO IP, Sarl] The Assignment further states

... I further agree to execute all necessary and lawful future documents, including assignments in favor of Assignee, or its designees as Assignee or its Assignees may from time-to-time present to me in order to perfect title in said Invention, modifications, and improvements in said Invention, applications and Letters Patent of the United States and countries foreign thereto;

And I further agree to sign and properly execute such necessary and lawful papers for application for foreign patents, for filing divisions, continuations and continuations-in-part of said application for patent, and/or, for obtaining reissue or reissues of any Letters Patent which may be granted for my aforesaid Invention, as the Assignee thereof shall hereafter require and prepare at its own expense.

We previously sent you papers on April 9, 2004 for filing the PCT patent application based on the prior U.S. provisional patent application filed April 18, 2003, including a request that you sign and date an enclosed Declaration: Inventorship (Sheet No. 7 of the Request) and you refused to sign that Declaration.

I would appreciate you telling me by return email whether you will sign a Declaration of the form attached or not before I go to the trouble of preparing the document and sending it to you for signature.

Sincerely,

Dave

David M. McConoughey, Esq.  
Stoll, Miskin & Badie  
350 Fifth Ave Ste 4710  
New York, NY 10118-4710

TEL: 212.268.1530  
FAX: 212.268.1593  
E-mail: dmccconou@ix.netcom.com

From: "David M. McConoughey" <dmcconou@ix.netcom.com>  
To: eduardoexplocontrol@telefonica.net  
Subject: U.S. Patent Application Corresponding to International Patent Application No.  
PCT/IB04/01539 (filed 04/16/2004)  
Date: Sep 26, 2006 9:13 AM

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Attachments: sb0001.pdf

Dear Eduardo:

Enclosed is a duplicate copy of the Declaration form I sent you yesterday with my email to you.

Sincerely,

David

David M. McConoughey, Esq.  
Stoll, Miskin & Badie  
Suite 4710  
Empire State Building  
350 Fifth Avenue  
New York, NY 10118-4710  
Telephone: 212.268.1530

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**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☐ Declaration  
Submitted  
With Initial  
Filing

OR

☐ Declaration  
Submitted after Initial  
Filing (surcharge  
(37 CFR 1.16 (e))  
required)

Attorney Docket  
Number

First Named Inventor

COMPLETE IF KNOWN

Application Number

Filing Date

Art Unit

Examiner Name

**I hereby declare that:**

Each inventor's residence, mailing address, and citizenship are as stated below next to their name.

I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

(Title of the Invention)

the specification of which

☐ is attached hereto

OR

☐ was filed on (MM/DD/YYYY) as United States Application Number or PCT International

Application Number and was amended on (MM/DD/YYYY) (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

[Page 1 of 2]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 21 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance completing the form, call 1-800-PTO-9199 and select option 2.

DAVID M. MCCONOUGH, ESQ.

STOLL, MISKIN & BADIE

DOCKET: 576391-2003

## EXHIBIT 7

From: "David M. McConoughey" <dmcconou@ix.netcom.com>  
To: "O'Connor Daniel J."  
Subject: FUSACO IP, Sarl - U.S. National Phase Patent Application  
Date: Nov 6, 2006 12:26 PM  
Dan:

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On September 29, 2006 , I asked Eduardo Diaz Del Rio Perez by letter to execute a declaration in the U.S. national phase patent application pursuant to his obligation to do so under the Assignemnt of April 18, 2003. Since I have received no response to that letter nor have I received the requested executed declaration, I have concluded that none will be forthcoming Sr. Diaz Del Rio Perez. Could you please confirm that with your client and advise me of such so that I can proceed accordingly. I would appreciate a response by Wednesday, November 8 so that I can proceed.

Regards,

Dave

David M. McConoughey, Esq.  
Stoll, Miskin & Badie  
Suite 4710  
Empire State Building  
350 Fifth Avenue  
New York, NY 10118-4710  
Telephone: 212.268.1530

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